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Commission on Sustainable Development

Report on the fourteenth session (22 April 2005 and 1-12 May 2006)

Economic and Social Council

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Note

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Chapter I

Matters calling for action by the Economic and Social Council

Draft decision recommended by the Commission for adoption by the Council

1. The Commission on Sustainable Development recommends to the Economic and Social Council the adoption of the following draft decision:

Report of the Commission on Sustainable Development on its fourteenth session and provisional agenda for the fifteenth session of the Commission

The Economic and Social Council takes note of the report of the Commission on Sustainable Development on its fourteenth session and approves the provisional agenda for the fifteenth session of the Commission as set out below.

Provisional agenda

1. Election of officers.
2. Adoption of the agenda and organization of work.
3. Thematic cluster for the implementation cycle 2006/2007 (policy session):
   (a) Energy for sustainable development;
   (b) Industrial development;
   (c) Air pollution/atmosphere;
   (d) Climate change.
4. Other matters.
5. Provisional agenda for the sixteenth session of the Commission.
6. Adoption of the report of the Commission on its fifteenth session.

Chapter II

Thematic cluster for the implementation cycle 2006/2007 (review session): (a) energy for sustainable development; (b) industrial development; (c) air pollution/atmosphere; (d) climate change

1. The Commission considered item 3 at its 2nd to 11th and 14th to 21st meetings, from 1 to 5 and 9 to 12 May 2006. For the documentation before the Commission under this agenda item, see annex I.

2. At its 2nd meeting, on 1 May 2006, the Commission heard presentations on the outcomes of intersessional events by the following participants: Zhang Yishan, Deputy Permanent Representative of China, on the outcomes of the United Nations Symposium on Hydropower and Sustainable Development and the 2005 Beijing International Renewable Energy Conference; Ellen Von Zitzewitz of the Ministry of Environment, Nature Conservation and Nuclear Safety of Germany, on the outcome of the 2004 Bonn International Conference on Renewable Energy; Ton Boon von Ochssee, Ambassador for Sustainable Development of the Netherlands, on the outcome of the Energy for Development conference; Cheng Shuifeng, Director-General of the Foreign Affairs Office of Jiang Xi Province of China, on the outcome of the United Nations International Symposium on Integrated Implementation of Sustainable Development Goals; Ricardo Ulate, Ministry of Environment and Energy of Costa Rica, on the outcome of the Second International Meeting on Sustainable Consumption and Production; Sharon Lee Smith, Director-General of the Climate Change International Directorate of Environment of Canada, on the outcome of the United Nations Climate Change Conference; Nassir Abdulaziz Al-Nasser, Permanent Representative of Qatar, on the outcome of the International Symposium on Natural Gas and Sustainable Development; Jamal Saghir, World Bank Director for Energy and Water, on the outcome of the World Bank Energy Week; Yashar Aliyev, Permanent Representative of Azerbaijan, on the outcome of the Baku Symposium on Energy Efficiency and Sustainable Development; Siddharta Behura, of the Ministry of Environment of India, on the outcome of Climate Change and Sustainable Development: an international workshop to strengthen research and understanding; and Elsa du Toit, Hydropower Director, Energy Efficiency, South Africa, on the outcome of the African Ministerial Conference on Hydropower and Sustainable Development.

3. At the same meeting, the following delegations made general statements: Austria (on behalf of the States Members of the United Nations that are members of the European Union, the acceding countries Bulgaria and Romania, the candidate countries Turkey, Croatia and the former Yugoslav Republic of Macedonia, the countries of the Stabilization and Association Process and potential candidates Albania, Bosnia and Herzegovina and Serbia and Montenegro, and the European Free Trade Association country Norway and members of the European Economic Area); Saint Lucia (on behalf of the States Members of the United Nations that are members of the Alliance of Small Island States); Zambia (on behalf of the States Members of the United Nations that are members of the African Group); the Russian Federation and China. Statements were also made by the observers for South Africa (on behalf of the States Members of the United Nations that are members of the

Group of 77 and China), Guyana (on behalf of the States Members of the United Nations that are members of the Rio Group) and Indonesia.

4. At the 3rd meeting, on 1 May 2006, a statement was made by the representative of the United Nations Environment Programme (UNEP) on the outcome of the ninth special session of the Governing Council/Global Ministerial Environment Forum.

5. At the same meeting, a statement was made by the representative of the Food and Agriculture Organization of the United Nations (FAO) on mountain partnerships.

6. Also at the same meeting, statements were made by the representatives of Jamaica, Algeria, Australia, Canada, Japan, Israel, Serbia and Montenegro, the United States of America, Pakistan, Italy, Mexico and Brazil, as well as the observers for the United Republic of Tanzania, Iceland, Costa Rica (on behalf of the States Members of the United Nations that are members of the Central American Integration System), Turkey, India, Kuwait, Switzerland, South Africa, Palau, Solomon Islands and Tuvalu.

7. At the 3rd (parallel) meeting, the Director of the Division for Sustainable Development made an introductory statement.

8. At the same (parallel) meeting, the Commission held thematic discussions on the topic "Improving access to reliable, affordable, economically viable, socially acceptable and environmentally sound energy services". On the sub-topic of "Improving access in urban and rural areas from the perspective of end-use applications", panel presentations were made by Roderick de Castro (Mirant Philippines Foundation), Jyoti K. Parikh (Integrated Research and Action for Development, India) and Olav Kjorven (Energy and Environment Group, United Nations Development Programme).

9. An interactive discussion ensued, during which statements were made by the representatives of Austria (on behalf of the States Members of the United Nations that are members of the European Union, the acceding countries Bulgaria and Romania, the candidate countries Croatia and the former Yugoslav Republic of Macedonia, the countries of the Stabilization and Association Process and potential candidates Albania, Bosnia and Herzegovina and Serbia and Montenegro), Canada, Mexico, the United States of America and China, as well as the observers for Guatemala, India and Norway.

10. Statements were also made by the representative of the World Health Organization, as well as the representatives of the following major groups: farmers; and workers and trade unions.

11. At the 4th meeting, on 2 May 2006, statements were made by the representatives of Australia, the Netherlands and Japan, as well as the observers for Argentina, Azerbaijan, South Africa and the United Republic of Tanzania.

12. A statement was also made by the representative of the following major group: scientific and technological communities.

13. Panel presentations on the sub-topic of "Gender and access to energy services" were made by Elizabeth Cecelski (Energy, Environment and Development, Germany); and Rose Mensah-Kutin (ABANTU for Development — Regional Office for West Africa, Ghana).

14. An interactive discussion ensued, during which interventions were made by the representatives of the United States of America, Austria (on behalf of the States Members of the United Nations that are members of the European Union, the acceding countries Bulgaria and Romania, the candidate countries Croatia and the former Yugoslav Republic of Macedonia, the countries of the Stabilization and Association Process and potential candidates Albania, Bosnia and Herzegovina and Serbia and Montenegro), the Netherlands and Canada, as well as the observers for the United Republic of Tanzania, Norway, South Africa, the Dominican Republic, Botswana, Barbados and Argentina.

15. Statements were also made by the representatives of the World Health Organization and the United Nations Development Programme (UNDP), as well as the representatives of the following major groups: women and farmers.

16. At the same meeting, the Commission continued its thematic discussion on the topic "Improving access to reliable, affordable, economically viable, socially acceptable and environmentally sound energy services". On the sub-topic of "Electrification, including rural electrification: overcoming infrastructure, financing, policy and institutional barriers", panel presentations were made by Harish Hande (SELCO Solar Light, India), Connie Smyser (Smyser and Associates, United States of America), Vijay Modi (Columbia University, United States of America) and Lee Yee Cheong (Energy Commission, Malaysia).

17. An interactive discussion ensued, during which interventions were made by the representatives of the United States of America, Jamaica, Brazil, Germany and Saudi Arabia, as well as the observers for Norway, Nigeria, Kuwait, India, Iceland, Indonesia, Sweden, Senegal, Mauritius, Morocco, Barbados, Botswana, Denmark and the Bolivarian Republic of Venezuela.

18. Statements were also made by the observer for the European Community, as well as the representatives of the following major groups: workers and trade unions, women, business and industry, and children and youth.

19. At the 4th (parallel) meeting, the Commission heard regional presentations followed by interactive discussions focused on the African and West Asian regions.

20. At the same meeting, following the statement by the Director of Sustainable Development of the Economic Commission for Africa, presentations were made by Blessing Manale, Director, International Sustainable Development Cooperation, Ministry of Environment of South Africa; Niyangbo Philipe, African Union Commission; Jacques Moulot (Economic Commission for Africa, United Nations Energy Africa); and Edward Clarence Smith (United Nations Industrial Development Organization (UNIDO)).

21. An interactive discussion ensued, during which statements were made by the representatives of the United Kingdom of Great Britain and Northern Ireland, France and the Sudan, as well as the observers for Denmark, Egypt, the Netherlands and Cape Verde.

22. Statements were also made by the representative of UNDP, as well as the representatives of the following major groups: farmers and women.

23. At the same meeting, following the statement by the Director of the Sustainable Development Division of the Economic and Social Commission for Western Asia, presentations were made by Aysar Tayeb, Adviser to the Minister of

Petroleum and Mineral Resources of Saudi Arabia; Sayed Emam, General Manager for Regional and International Cooperation of the Ministry of Electricity and Energy of Egypt; Fouad Shaker, Secretary-General of the Union of Arab Banks; and Emad Adly, Chairman of the Arab Network for Environment and Development.

24. An interactive discussion ensued, during which statements were made by the representatives of the United States of America and Germany, as well as the observers for Egypt, the Syrian Arab Republic, Jordan and Kuwait.

25. A statement was also made by the representative of the following major group: business and industry.

26. At the 5th meeting, on 2 May 2006, the Commission heard regional presentations followed by interactive discussions focused on Europe and North America, as well as Asia and the Pacific.

27. At the same meeting, following the statements by Kaj Barlund, Director, Environment, Housing and Land Management Division of the Economic Commission for Europe, and Eliot Morley, Minister for the Environment of the United Kingdom of Great Britain and Northern Ireland, presentations were made by J. Christophe Frieg, Special Representative of the Swiss Federal Office of Energy; Viktor Baranchuk, Deputy Minister of Industrial Policy of the Ukraine; and Martin Williams, Head of the Air and Environmental Quality Division, Department of Environment, Food and Rural Affairs of the United Kingdom of Great Britain and Northern Ireland.

28. An interactive discussion ensued, during which interventions were made by the representative of Austria, on behalf of the States Members of the United Nations that are members of the European Union, as well as the observers for Jordan, Azerbaijan, Turkey, Croatia, Sweden and Romania.

29. Statements were also made by the representatives of the following major groups: children and youth; and workers and trade unions.

30. At the same meeting, following the statements by Rae Kwon Chung, Director of Sustainable Development, Economic and Social Commission for Asia and the Pacific, and Liana Bratasida, Assistant Minister of Environment of Indonesia, presentations were made by Xinhuai Wang, Deputy Director of the National Development and Reform Commission of China; Padma Lal, Sustainable Development Adviser of the Pacific Islands Forum Secretariat, Fiji; Susumu Okamoto, Deputy Director of the Global Environmental Affairs Office, Ministry of Economy, Trade and Industry of Japan; and Jyoti Parikh, Executive Director of Integrated Research and Action for Development, India.

31. An interactive discussion ensued, during which interventions were made by the representatives of the Republic of Korea, Saudi Arabia, Fiji, the United States of America, Kazakhstan, Australia, China, Pakistan, Qatar, Japan and Thailand.

32. Statements were also made by the representatives of the following major groups: scientific and technological communities; farmers; and women.

33. At the 5th (parallel) meeting, the Commission held thematic discussions on the topic "Enhancing energy efficiency to address air pollution and atmospheric problems, combat climate change and promote industrial development", with three sub-topics: "Energy efficiency: incentives vis-à-vis disincentives", "Improved

transmission of electricity" and "End-use efficiency in commercial and residential sectors".

34. At the same meeting, panel presentations were made by Alfred Ofosu Ahenkorah, Executive Director, Energy Foundation of Ghana; Mark D. Levine, Director, Environmental Energy Technologies Division, Lawrence Berkeley National Laboratory; Zhou Dadi, Director General of the Energy Research Institute of the National Development and Reform Commission of China; and Stephen Wiel, President, Board of the Collaborative Labelling and Standards Program.

35. An interactive discussion ensued, during which statements were made by the representatives of the United States of America, Austria (on behalf of the States Members of the United Nations that are members of the European Union), Cuba, Brazil, Canada, Japan, Italy, China, Mexico, Thailand, Australia and Qatar, as well as the observers for Bulgaria, Costa Rica (on behalf of the States Members of the United Nations that are members of the Central American Commission on Environment and Development), Jordan, Mauritius, Nigeria, South Africa and Norway.

36. Statements were also made by the representatives of the European Commission and the Global Environment Facility (GEF), as well as the representatives of the following major groups: workers and trade unions; non-governmental organizations; farmers; and business and industry.

37. At the 6th meeting, on 3 May 2006, the Commission heard regional presentations followed by interactive discussions focused on the Latin America and Caribbean region.

38. At the same meeting, following the statement by the Vice-Chairman on the Regional Implementation Forum on Sustainable Development in Latin America and the Caribbean, presentations were made by Marianne Schaper, Deputy Director, Division for Sustainable Development and Human Settlements, Economic Commission for Latin America and the Caribbean; Leida Mercado, Regional Adviser, UNDP; and Sergio Sánchez, Regional Officer, World Bank.

39. An interactive discussion ensued, during which statements were made by the representatives of Brazil and Colombia, as well as the observers for Argentina, Barbados, the Bolivarian Republic of Venezuela, Guyana and the Bahamas.

40. Statements were also made by the representatives of the following major groups: workers and trade unions; and women.

41. At the same meeting, the Commission held a multi-stakeholder dialogue on the role of major groups in relation to the thematic cluster, including in the area of education, raising public awareness, disseminating information and knowledge, including technical know-how, and fostering partnership initiatives. The time allocated to the major groups was divided into three segments, with each segment comprising of three groups and focused on one of the thematic clusters.

42. On the theme of "Climate change and air pollution/atmosphere", statements were made by representatives of the following major groups: local authorities; indigenous people; and farmers.

43. Statements were also made by the representatives of Australia, Austria and Canada, as well as the observer for South Africa.

44. A statement was also made by the representative of the following major group: women.

45. On the theme of "Energy for sustainable development", statements were made by representatives of the following major groups: business and industry; women; and scientific and technological communities.

46. Statements were also made by the representatives of the United States of America, Austria and Italy, as well as the observer for Kuwait.

47. At the same meeting, the representative of the United States of America responded to a question posed by the representative of the following major group: non-governmental organizations.

48. On the theme of "Industrial development", statements were made by the representatives of the following major groups: non-governmental organizations; workers and trade unions; and children and youth.

49. A statement was also made by the observer for Sweden, as well as the representative of the following major group: non-governmental organizations.

50. At the 6th (parallel) meeting, the Commission held a thematic discussion on the topic "Meeting growing needs for energy services through increased use of renewable energy, greater reliance on advanced energy technologies, including advanced and fossil fuel technologies". Panel presentations were made by Jüergen Trittin, German Bundestag, former Minister of Environment, Germany; Hiroshi Komiyama, President, Tokyo University; and Suani Teixeira Coelho, Deputy Secretary for the State for the Environment, Sao Paulo State, Brazil.

51. An interactive discussion ensued, during which statements were made by the representatives of Brazil, China, Canada, Austria (on behalf of the States Members of the United Nations that are members of the European Union), Saudi Arabia and the United States of America, as well as by the observers for Barbados and the Dominican Republic.

52. A statement was also made by the representative of the following major group: children and youth.

53. At the same meeting, panel presentations were made by Daniel Theuri, Senior Programme Manager, Intermediate Technology Development Group, East Africa; and Yona Siderer, Lecturer, Photovoltaic Power Systems, Hebrew University, Israel.

54. An interactive discussion ensued, during which statements were made by the representatives of Japan, Germany, Australia, the Netherlands, Pakistan and Thailand, as well as by the observers for Cape Verde, Mauritius, Iceland, Italy, Denmark, South Africa and Sweden.

55. Statements were also made by the representative of the International Union for the Conservation of Nature and Natural Resources, as well as the representative of the following major group: women.

56. At the 7th meeting, on 3 May 2006, the Commission continued its thematic discussion on the topic "Meeting growing needs for energy services through increased use of renewable energy, greater reliance on advanced energy technologies, including advanced and fossil fuel technologies". Panel presentations were made by Robert Dixon, Head of the Energy Policy Division, International

Energy Agency of France; Hisham Al-Khatib, Chairman, Jordan Electricity Regulatory Commission, and Honorary Vice-Chairman of the World Energy Council; and Vincent Kitio, Human Settlement Officer with the Best Practices and Local Leadership Programme of the United Nations Human Settlements Programme (UN-Habitat).

57. An interactive discussion ensued, during which statements were made by the representatives of Mexico, Colombia, China, Brazil, the United States of America, Australia, Canada and Saudi Arabia, as well as by the observers for Turkey, Jordan, Indonesia, India, Bhutan, Azerbaijan, the Marshall Islands, Morocco, Kuwait, Egypt, Guatemala, Spain, Norway, Sri Lanka, Lesotho and Côte d'Ivoire.

58. A statement was also made by the representative of the International Atomic Energy Agency (IAEA), as well as by the following major group representatives: business and industry; workers and trade unions; scientific and technological communities; children and youth; farmers; and indigenous people.

59. At the 7th (parallel) meeting, the Commission continued its thematic discussion on the topic "Enhancing energy efficiency to address air pollution and atmospheric problems, combat climate change and promote industrial development".

60. At the same meeting, panel presentations were made by Diego Arriona, Executive Secretary, National Commission for Energy Savings, Mexico; Walter Hook, Executive Director, Institute for Transportation and Development Policy, United States of America; François-Regis Mouton, Global Gas Flaring Reduction; and Elena Sierra Galindo, Director, Energy and the Environment, Energy Secretariat, Mexico.

61. An interactive discussion ensued, during which statements were made by the representatives of the United States of America, Japan, the United Kingdom of Great Britain and Northern Ireland, Brazil, Pakistan, Finland, Saudi Arabia, the Netherlands and Australia, as well as by the observers for Indonesia, Mauritius, Panama (on behalf of the States Members of the United Nations that are members of the Central American Commission on Environment and Development), Switzerland, Thailand, Senegal, India, Norway, Yemen and South Africa.

62. Statements were also made by the representatives of the following major groups: workers and trade unions; women; scientific and technological communities; non-governmental organizations; business and industry; and children and youth.

63. At the 8th meeting, on 4 May 2006, the Commission held a thematic discussion on the topic "Accelerating industrial development for poverty eradication".

64. At the same meeting, following an oral report by the representative of the Division for Sustainable Development, presentations were made by Ogunlade Davidson, Professor of Mechanical Engineering and Dean of Post-Graduate Studies, University of Sierra Leone; Ahmed A. Hamza, Professor Emeritus of Environmental Health Engineering, Alexandria University, Egypt; Evans Kituyi, Head of Division, Environmental Chemistry of the University of Nairobi, Kenya; and Edward Clarence-Smith, Coordinator for the GEF of UNIDO.

65. An interactive discussion ensued, during which statements were made by the representatives of Pakistan, Colombia, China, Austria (on behalf of the States Members of the United Nations that are members of the European Community), the Netherlands, Australia, the United Kingdom of Great Britain and Northern Ireland, the United States of America, Mexico, Canada and France, as well as the observers for Jordan, Mauritius, South Africa, Afghanistan, Indonesia, Morocco, Singapore, Norway, India, the Dominican Republic and the Libyan Arab Jamahiriya.

66. Statements were also made by the representatives of the following major groups: children and youth; workers and trade unions; non-governmental organizations; women; and farmers.

67. At the 8th (parallel) meeting, the Commission held a thematic discussion on the topic "Integrated approach to addressing air pollution and atmospheric problems".

68. At the same meeting, following an oral report by the representative of the Division for Sustainable Development, presentations were made by Carlos Corvalan, Coordinator, Occupational and Environmental Health, World Health Organization; Kirk Smith, Professor of Health Science, University of California Berkeley, United States of America; Gianni López Ramirez, Molina Institute, Chile, former Minister of Environment of Chile; Michael Walsh, atmosphere/vehicle emission expert, MacArthur Fellow; and Ivan Toms, Director for City Health, Cape Town, South Africa.

69. Following the statement made by the representative of the World Meteorological Organization, an interactive discussion ensued, during which statements were made by the representatives of Austria (on behalf of the States Members of the United Nations that are members of the European Union), China, the Russian Federation, Pakistan, Germany, Australia, the United States of America, Jamaica (on behalf of the Small Island Developing States), Italy and the Republic of Korea, as well as the observers for the Bolivarian Republic of Venezuela, Sweden, the Netherlands, Azerbaijan, South Africa, Ecuador and India.

70. Statements were also made by the representative of the European Commission, as well as the representatives of the following major groups: children and youth; workers and trade unions; and women.

71. At the 9th meeting, on 4 May 2006, the Commission held a thematic discussion on the topic "Addressing interlinkages between climate change and sustainable development".

72. At the same meeting, following an oral report by the representative of the Division for Sustainable Development, presentations were made by Jonathan Pershing, Director of the World Resources Institute's Climate, Energy and Pollution Program; R. K. Pachauri, Chairman of the Intergovernmental Panel on Climate Change and Chief Executive of the Tata Energy Research Institute, India; Gordon Conway, Chief Scientific Adviser for the Department for International Development, United Kingdom of Great Britain and Northern Ireland; Halldor Thorgeirsson, Deputy Executive Secretary, Scientific and Technological Advice of the Climate Change Secretariat, Germany, and Coordinator of the Subsidiary Body for Scientific and Technological Advice; and Steve Sawyer, Executive Director of Greenpeace International, United Kingdom of Great Britain and Northern Ireland.

73. An interactive discussion ensued, during which statements were made by the representatives of Austria (on behalf of the States Members of the United Nations that are members of the European Union), China, Brazil, Pakistan, Italy, the Russian Federation, Australia, Colombia, France, the United States of America, the United Kingdom of Great Britain and Northern Ireland, Saudi Arabia, Japan and Jamaica, as well as the observers for Costa Rica, Guatemala, Bahamas, Sweden, India, Iceland, Barbados (on behalf of the States Members of the United Nations that are members of the Alliance of Small Island States), Panama, Indonesia, South Africa and Denmark.

74. Statements were also made by the representatives of the following major groups: workers and trade unions; women; indigenous people; and scientific and technological communities.

75. At the 10th meeting, on 5 May 2006, statements were also made by the representative of Germany and the observers for Morocco and Kuwait, as well as the European Commission.

76. At the 9th (parallel) meeting, the Commission held a thematic discussion on the topic "Industrial development and sustainable natural resource management".

77. At the same meeting, presentations were made by Zuo Xuejin, Executive Vice-President, Shanghai Academy of Social Sciences; V. S. Arunachalam, Chairman for the Study of Science and Technology Policy, Collegiate Science and Technology Entry Program; and Ernst von Weizsacker, Bren School of Environmental Science and Management, University of California, Santa Barbara.

78. An interactive discussion ensued, during which statements were made by the representatives of Austria (on behalf of the States Members of the United Nations that are members of the European Union), Japan, China, Canada, the United States of America, Germany, the Netherlands, Australia and Mexico, as well as the observers for El Salvador (on behalf of the States Members of the United Nations that are members of the Central American Integration System), South Africa, Jordan, Mauritius, Norway, Indonesia, Sweden, Nigeria and the Dominican Republic.

79. Statements were also made by the representatives of the following major groups: non-governmental organizations; workers and trade unions; children and youth; farmers; women; and indigenous people.

80. At the 10th meeting, on 5 May 2006, the Commission held thematic discussion on the topic "Investing in energy and industrial development: challenges and opportunities", with three sub-topics: "Enabling environment, including national energy and industry policies and regulatory framework, for increased investments in energy and industry", "Capital markets and foreign direct investment: funding for large-scale energy and industrial projects" and "Innovative financing arrangements and incentives, including for small-scale projects".

81. At the same meeting, presentations were made by Fatih Birol, Chief Economist of IAEA and Head of the Economic Analysis Division, France; Margo Thorning, Managing Director of the International Council for Capital Formation, Belgium; and Christine Woerlen, Programme Manager for Renewable Energy and New Low-Greenhouse Gas Emitting Energy Technologies, GEF.

82. An interactive discussion ensued, during which statements were made by the representatives of Uganda, China, the Russian Federation, Austria (on behalf of the States Members of the United Nations that are members of the European Union), the Netherlands, the United States of America, Canada, Japan, France, Australia and Mexico, as well as the observers for Jordan, Côte d'Ivoire, Norway, Egypt, South Africa, Denmark, Panama and Swaziland.

83. Statements were also made by the representatives of the World Health Organization, the World Bank and the European Commission.

84. The representatives of the following major groups also made statements: children and youth; non-governmental organizations; and workers and trade unions.

85. At the 10th (parallel) meeting, the Commission held a thematic discussion on the topic "Enhancing means of implementation through subregional, regional and international cooperation".

86. At the same meeting, presentations were made by Mats Karlsson, Vice-President, World Bank, Chairman, United Nations Energy; Ravi Sawhney, Principal Officer, Economic and Social Commission for Asia and the Pacific; Jamal Saghir, Director, Energy and Water, World Bank; Lindiwe Lusenga, General Manager, Multilateral and Africa Cooperation, Department of Science and Technology, South Africa; and A. Rani Parker, President and Founder of Business Community Synergies.

87. An interactive discussion ensued, during which statements were made by the representatives of Canada, Austria (on behalf of the States Members of the United Nations that are members of the European Union), the United States of America, Mexico, Kazakhstan, Japan, Australia, China, Pakistan and Cuba, as well as the observers for Jordan, Costa Rica (on behalf of the States Members of the United Nations that are members of the Central American Integration System), South Africa, the Dominican Republic, Norway, Morocco, the Bolivarian Republic of Venezuela, Indonesia and the United Republic of Tanzania.

88. The representatives of the following major groups also made statements: children and youth; workers and trade unions; scientific and technological communities; non-governmental organizations; and farmers.

89. At its 11th meeting, on 5 May 2006, the Commission held a thematic discussion on the topic "Addressing energy, industrial development, air pollution/atmosphere and climate change in an integrated manner, focusing on interlinkages and cross-cutting issues".

90. At the same meeting, presentations were made by Tsutomu Uehara, Deputy Mayor for Environmental Administration of Kyoto City, Japan; Jayant Sathaye, Senior Staff Scientist and Head of the International Energy Studies Group, Lawrence Berkeley National Laboratory, United States of America; David B. Goldstein, Co-Director of the Energy Program, Natural Resources Defense Council, United States of America; Thomas Kerr, Chief in the Office of Air and Radiation, United States Environmental Protection Agency; and Huang Ming, Chairman of the Board of Himin Solar Energy Group Company, China.

91. An interactive discussion ensued, during which statements were made by the representatives of the United States of America, Japan, Austria (on behalf of the States Members of the United Nations that are members of the European Union),

Canada, Italy, the Netherlands, the United Kingdom of Great Britain and Northern Ireland, China and Mexico, as well as the observers for Senegal, Norway, Indonesia, Mauritius and Egypt.

92. Statements were also made by the representative of the United Nations Human Settlements Programme, as well as the representatives of the following major groups: scientific and technological communities; non-governmental organizations; workers and trade unions; women; business and industry; children and youth; and indigenous people.

93. At its 12th meeting, on 8 May 2006, in accordance with decision 13/1 of the Commission at its thirteenth session, the Commission held the first review session on the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, as well as on any new developments regarding the sustainable development efforts of small island developing States. The review session was comprised of panel presentations and interactive discussions on three sub-topics: "Towards increased energy efficiency, energy access and the development and expanded use of renewable energy technology in small island developing States", "Innovative strategies to enhance industrial development in small island developing States" and "Mitigating air pollution and promoting adaptation to climate change in small island developing States".

94. At the same meeting, the Assistant Secretary-General for Policy Coordination and Inter-Agency Affairs, the Under-Secretary-General and High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States and the Chairman of the Alliance of Small Island States addressed the Commission.

95. At the same meeting, the Commission had the first panel discussion on "Towards increased energy efficiency, energy access and the development and expanded use of renewable energy technology in small island developing States". Presentations were made by Basil Sutherland, former Executive Director of the Caribbean Electric Utilities Services Corporation; Kasseap Deepchand, Deputy Executive Director/Technical Manager at the Mauritius Sugar Authority; and David Barrett, Manager of Energy and Environment at the Petroleum Corporation of Jamaica.

96. An interactive discussion ensued during which statements were made by the representatives of Austria (on behalf of the States Members of the United Nations that are members of the European Union), Cuba, Mauritius, China, Germany, Japan, Canada, Brazil, Australia, the United States of America, Mexico and Fiji, as well as the observers for Azerbaijan, Italy, Iceland, Tuvalu, Dominica, Papua New Guinea and Tonga.

97. Statements were also made by the representative of the following major groups: non-governmental organizations, scientific and technological communities, and women.

98. At the 13th meeting, on 8 May 2006, the Commission had the second panel discussion on "Innovative strategies to enhance industrial development in small island developing States". Presentations were made by Pamela Baldinger, Energy and Environment Specialist for the Energy Team of the United States Agency for International Development; Tom Wichman, Energy and Waste Management Entrepreneur from the Cook Islands; Alina Myazoe, Energy Planner at the Ministry

of Resources and Development in the Republic of the Marshall Islands; and Carlos M. Echeverria, Strategic Alliances Manager of the Inter-American Institute for Cooperation on Agriculture.

99. An interactive discussion ensued, during which statements were made by the representative of Germany, as well as the observers for Nigeria, Côte d'Ivoire, Switzerland, Guatemala, the Marshall Islands, India, Mauritius and Kuwait.

100. A statement was made by the representative of the Economic Commission for Latin America and the Caribbean.

101. At the same meeting, the Commission had the third panel discussion on "Mitigating air pollution and promoting adaptation to climate change in small island developing States". Presentations were made by Leslie Walling, Natural Resource Manager and Executive Director of the Caribbean Conservation Association; and Albert Binger, former Director of the University of the West Indies Center for Environment and Development and former Chair of Strategic Planning of the Rockefeller Foundation.

102. An interactive discussion ensued, during which a statement was made by the representative of Italy, as well as by the observers for Greece, the Dominican Republic, Papua New Guinea, Tuvalu, Senegal, Cape Verde and India.

103. Statements were also made by the representatives of the following major groups: farmers; and workers and trade unions.

104. At its 14th meeting, on 9 May 2006, the Commission held a thematic discussion on the topic "Enhancing the contributions of the private sector and other stakeholders in addressing air pollution and atmospheric problems, combating climate change and promoting industrial development".

105. At the same meeting, presentations were made by Peter Odili, Executive Governor, Rivers State, Nigeria; Linda J. Fisher, Vice-President and Chief Sustainability Officer, Dupont Corporation; and Bernard Saincy, Confédération générale du travail, France.

106. An interactive discussion ensued, during which statements were made by the representatives of Austria (on behalf of the States Members of the United Nations that are members of the European Union), France and the Netherlands, as well as by the observers for Senegal, India, Sweden and Indonesia.

107. A statement was also made by the representative of the following major group: non-governmental organizations.

108. At the same meeting, presentations were made by Karsani Aulia, President Director and Chief Executive Officer of Pertamina Bumi Siak Pusako Energy of Indonesia; Stephen John Lennon, Managing Director for Resources and Strategy of Eskom, South Africa; and Brian Flannery, Science, Strategy and Programs Manager in the Safety, Health and Environment Department of Exxon Mobil Corporation, United States of America.

109. An interactive discussion ensued, during which interventions were made by the representatives of the United States of America and Japan, as well as by the observers for Kuwait, South Africa, Gabon and Senegal.

110. Statements were also made by the representative of the Economic Commission for Latin America and the Caribbean, as well as the representatives of the following major groups: workers and trade unions; indigenous people; children and youth; and women.

111. At the 15th meeting, on 9 May 2006, the Chairman introduced Part I of the Chairman's summary, which was distributed earlier in the room.

112. At the same meeting, statements were made by the representatives of Canada (on behalf of the JUSCANZ Group), Austria (on behalf of the States Members of the United Nations that are members of the European Community), Saudi Arabia, Mexico, Cuba, Brazil, Australia, China, Qatar, the United States of America and Pakistan, as well as the observers for South Africa (on behalf of the States Members of the United Nations that are members of the Group of 77 and China); the Bahamas, Argentina, India, Indonesia, the United Republic of Tanzania (on behalf of the States Members of the United Nations that are members of the African Group), Kuwait, Costa Rica (on behalf of the States Members of the United Nations that are members of the Central American Integration System), Barbados (on behalf of the States Members of the United Nations that are members of the Alliance of Small Island States), Iceland, Guyana (on behalf of the States Members of the United Nations that are members of the Rio Group), Egypt, Azerbaijan and the Dominican Republic.

113. The representative of the Economic Commission for Latin America and the Caribbean also made a statement.

High-level segment

114. The Commission had its high-level segment at the 16th to 21st meetings, on 10 to 12 May 2006.

115. At the 16th meeting, on 10 May, the Chairman opened the high-level segment and made an opening statement.

116. At the same meeting, the Secretary-General addressed the Commission.

117. Also at the same meeting, the Commission held an interactive ministerial dialogue with a panel of Ministers, business leaders and representatives of international financial institutions on the topic "Making a difference".

118. Presentations were made by the following panel of ministers: Lindiwe Hendricks, Minister of Minerals and Energy, South Africa; Abdullah Hamad Al-Attiyah, Second Deputy Prime Minister and Minister of Energy and Industry, Qatar; Agnes van Ardenne-van der Hoeven, Minister for Development Cooperation, the Netherlands; Paula Dobriansky, Under-Secretary of State, United States of America State Department; Du Ying, Vice Chairman of the National Development and Reform Commission, China; and Hassan Ahmad Younis, Minister of Electricity and Energy, Egypt.

119. Statements were made by the following panel of business leaders: Valli Moosa, Chairman, Eskom, and Chairman, Business Action for Energy; Travis Engen, President and Chief Executive Officer, Alcan (retired), and Chairman, World Business Council for Sustainable Development; John Hofmeister, President and United States of America Chair, Royal Dutch Shell plc; L. G. Josefsson, Chief

Executive Officer, Vattenfall; Abdulla Sallat, Chief Executive Officer, Qatar Industries; Massimo Romano, Executive Vice President for Public and Regulatory Affairs, Enel SpA; Herman Mulder, Senior Executive Vice President for Group Risk Management, ABN AMRO; Claude Nahon, Senior Executive Vice-President for Sustainable Development and Environment, EDF Group; and Fasihul Karim Siddiqi, Director, Hinopak Motors, Karachi.

120. Statements were also made by the representatives of the following international financial institutions: Len Good, Chairman and Chief Executive Officer, GEF; and Kathy Sierra, Vice President for Infrastructure, World Bank.

121. An interactive discussion ensued, in which statements were made by the representatives of Saudi Arabia and the Netherlands, as well as the observers for the Bahamas, the Dominican Republic and Senegal.

122. A statement was also made by a major group representative, on behalf of the following groups: non-governmental organizations; women; children and youth; workers and trade unions; and indigenous people.

123. At the 17th meeting, on 10 May 2006, the Commission began its ministerial dialogue on the topic "The way forward", and following a statement by the Vice-Chairman, the Commission heard a message, via video link, by Pascal Lamy, Director-General, World Trade Organization.

124. At the same meeting, ministerial statements were made by Marthinus van Schalkwyk, Minister of Environmental Affairs, South Africa (on behalf of the States Members of the United Nations that are members of the Group of 77 and China); Josef Proell, Minister of Agriculture, Forests, Environment and Water, Austria (on behalf of the States Members of the United Nations that are members of the European Union); Georgette Koko, Vice-Prime Minister in charge of the Environment, Protection of Nature, Research and Technology, Gabon; Abdullah Hamad Al-Attiyah, Second Deputy Prime Minister and Minister of Energy and Industry, Qatar; Du Ying, Vice-Chairman of National Development and Reform Commission, China; Sigmar Gabriel, Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Germany; Pieter van Geel, State Secretary, Ministry of Housing, Spatial Planning and the Environment, the Netherlands; Sigridur Anna Thordardottir, Minister for the Environment, Iceland; Dick Roche, Minister for the Environment, Heritage and Local Government, Ireland; Ian Campbell, Minister for the Environment, Australia; Purnomo Yusgiantoro, Minister of Energy and Mineral Resources, Indonesia; Mohammed Saeed Al-Kindi, Minister of Water and Environment, United Arab Emirates; David W. Adeang, Minister of Foreign Affairs and Trade, Nauru; Aleksandar Popovic, Minister for Science and Environmental Protection, Serbia and Montenegro; Onkokame K. Mokaila, Minister of the Environment, Wildlife and Tourism, Botswana (on behalf of the States Members of the United Nations that are members of the Southern African Development Community); Jafrul Islam Chowdhury, State Minister of Environment and Forests, Bangladesh; Helen Esuene, Minister of Environment, Nigeria; Jean-Pierre Babatunde, Minister of the Environment and Nature Conservation, Benin; Kahinda Otafiire, Minister of Water, Lands and Environment, Uganda; Prince Turki Bin Nasser Al-Saud, Head, Meteorology and Environmental Protection Agency, Saudi Arabia; Mona Sahlin, Minister for Sustainable Development, Sweden; Lindiwe Hendricks, Minister of Minerals and Energy, South Africa; Valerie Brachya, Senior Deputy Director-General, Policy and Planning, Ministry of the

Environment, Israel; Tatiana Starchenko, Deputy Minister of Economy, Belarus; Jordan Dardov, Deputy Minister of Environment and Water, Bulgaria; Saufatu Sopoanga, Deputy Prime Minister and Minister of Works and Energy, Communications and Transport, Tuvalu; Lee Kyoo-Yung, Vice-Minister of the Environment, Republic of Korea; Hamid Chitchian, Senior Deputy Minister of Energy, Islamic Republic of Iran; Petrpong Pungbun Na Ayudhya, Permanent Secretary, Ministry of Natural Resources and Environment, Thailand; Istvan Ury, Administrative State Secretary of the Ministry of Environmental Protection and Water Management, Hungary; Stavros Dimas, Commissioner for Environment of the European Community; Thomas Becker, Head of Department, Ministry of the Environment, Denmark; Denys Gauer, Ambassador for Environmental Issues, France; and Armen Baibourtian, Deputy Minister of Foreign Affairs, Armenia.

125. At the 18th meeting, on 11 May 2006, the Commission held an interactive ministerial dialogue with heads of United Nations agencies, funds and programmes, including international financial institutions, on the topic "Making a difference".

126. Presentations were made by the Executive Secretary, Economic and Social Commission for Asia and the Pacific; Associate Administrator, UNDP; Deputy Executive Director/Officer-in-Charge, UNEP; Executive-Secretary, United Nations Convention to Combat Desertification (UNCCD); Executive-Secretary, Convention on Biological Diversity (CBD); Officer-in-Charge, United Nations Framework Convention on Climate Change (UNFCCC); Acting Vice-President, Environmentally and Socially Sustainable Development Network, World Bank; Assistant Director-General, WHO; Assistant Secretary-General, World Meteorological Organization (WMO); Chief Executive Officer and Chairman, GEF; Deputy Secretary-General, Organization for Economic Cooperation and Development (OECD); and Secretary-General, International Energy Forum, as well as the representative of the Organization of Petroleum Exporting Countries.

127. Statements were also made by the representatives of the Islamic Republic of Iran, the United States of America, France, Brazil and the Netherlands, as well as by the observers for Iceland and South Africa.

128. At the same meeting, the Commission held an interactive ministerial dialogue with the major groups, on the topic "Making a difference". The dialogue was comprised of three segments of three major groups each.

129. For the first segment, statements were made by the representatives of the following major groups: non-governmental organizations, women, and workers and trade unions.

130. Statements were then made by the observers for South Africa and the Dominican Republic.

131. For the second segment, statements were made by the representatives of the following major groups: business and industry, local authorities, and scientific and technological communities.

132. Statements were made by the representatives of the United Kingdom of Great Britain and Northern Ireland, Qatar and the Netherlands, the observer for Norway and the representative of the World Health Organization.

133. For the third segment, statements were made by the representatives of the following major groups: indigenous people, farmers, and children and youth.

134. A statement was also made by the representative of the non-governmental organizations.

135. At the 19th meeting, on 11 May 2006, the Commission continued with the ministerial dialogue on the topic "The way forward".

136. At the same meeting, ministerial statements were made by Josef Proell, Minister of Agriculture, Forests and Environment, Austria (on behalf of the States Members of the United Nations that are members of the European Union); Robert G. Aisi, Permanent Representative of Papua New Guinea (on behalf of the States Members of the United Nations that are members of the Pacific Islands Forum); El-Mostafa Sahel, Permanent Representative of Morocco; Noah M. Wekesa, Minister for Science and Technology, Kenya; Nabeela Abdulla Al-Mulla, Permanent Representative of Kuwait; Erik Solheim, Minister for International Development, Norway; Silvian Ionescu, State Secretary, Ministry of Environment and Waters Management, Romania; Jacques Alle Andoh, Minister for Environment, Water and Forestry, Côte d'Ivoire; Agnieszka Bolesta, Under-Secretary of State, Ministry of the Environment, Poland; Arunas Kundrotas, Minister of the Environment, Lithuania; Sirodjidin Aslov, Permanent Representative of Tajikistan; M. Kazhyken, Ministry of Industry and Trade, Kazakhstan; Robert Lawson, Director of Environmental Strategy, Department for the Environment, Food and Rural Affairs, United Kingdom of Great Britain and Northern Ireland; Marcus Bethel, Minister of Energy and the Environment, Bahamas; Elizabeth Thompson, Minister of Energy and Environment, Barbados; Hassan Ahmad Younis, Minister of Electricity and Energy, Egypt; Konstantin Pulikovsky, Chairman, Federal Environment, Industrial and Nuclear Supervision, Russian Federation; Stefan Wallin, State Secretary, Finland; Laurent Sedogo, Minister of the Environment and Quality of Life, Burkina Faso; Elsa Van Weert, Secretary of State for Sustainable Development and Social Economy, Belgium; Mamphono Khaketla, Minister of Natural Resources, Lesotho; Anil Kumar Bachoo, Minister of Environment and National Development Unit, Mauritius; Onkokame K. Mokaila, Minister of the Environment, Wildlife and Tourism, Botswana; Ahmed Babiker Nihar, Minister for Environment and Urban Development, Sudan; Malik Amin Aslam, Minister of State for Environment, Pakistan; Gregory Rusland, Minister of Natural Resources, Suriname; Ato Alemayehu Tegenu, Minister of Mines and Energy, Ethiopia; Prodipto Ghosh, Secretary, Ministry of Environment and Forests, India; Stavros Dimas, Commissioner for the Environment, European Community; Marija Vojnovic, Assistant Minister, Strategic and Integration Process in Environmental Protection, Croatia; Fernando Tudela, Vice-Minister of the Environment, Mexico; Yasuyuki Eda, Senior Vice-Minister of the Environment, Japan; and Nora Delgado, Vice-Minister for Environmental Management, Bolivarian Republic of Venezuela.

137. At the 20th meeting, on 12 May 2006, the Commission continued with the ministerial dialogue on the topic "The way forward", and ministerial statements were made by Annika Velthut, Secretary-General, Ministry of Environment (Estonia); Hazri Hassan, Deputy Director for International Relations, Environment Ministry (Singapore); Serge Chappette, Assistant Director General, Swiss Agency for Development and Cooperation (Switzerland); Aldo Mantovani, Permanent Representative of Italy; Archbishop Celestino Migliore, Permanent Observer of the Holy See; Baki Ilkin, Permanent Representative of Turkey; Hamid Al-Bayati, Permanent Representative of Iraq; Maged George Elias, Minister of the Environment (Egypt); João Salgueiro, Permanent Representative of Portugal;

Margarita Songco, Under-Secretary, National Economic Development Authority (Philippines); Yerzhan Kazykhanov, Permanent Representative of Kazakhstan; Maria de Fatima Lima Da Veiga, Permanent Representative of Cape Verde; Rodrigo Malmierca, Permanent Representative of Cuba; Collin D. Beck, Permanent Representative of Solomon Islands; Dasho Nado Rinchhen, Minister for Environment (Bhutan); Kadyrbek Sarbaev, Senior Minister of Foreign Affairs (Kyrgyzstan); Lucien Lux, Minister of Environment (Luxembourg); Yashar Aliyev, Permanent Representative of Azerbaijan; Devon Rowe, Permanent Secretary in the Ministry of Local Government and Environment (Jamaica); Pennelope Beckles, Minister of Public Utilities and Environment (Trinidad and Tobago); Luciano de Castro, Minister of Coordination of Environmental Affairs (Mozambique); Claudio Langone, Deputy Minister of the Environment (Brazil); Hamid Chitchian, Senior Deputy Minister of Energy (Islamic Republic of Iran) (on behalf of the States Members of the United Nations that are members of the Economic Cooperation Organization); Karen Kraft-Sloan, Ambassador for the Environment (Canada); Ibrahim Sesay, Deputy Minister for Development and Economic Planning (Sierra Leone); Jaime Alejandre, Director-General of Environmental Quality (Spain); Joseph Ntakirutimana, Permanent Representative of Burundi; the representative of Zambia; Radzi Rahman, Alternate Permanent Representative of Malaysia; Jorge Ballestero, Chargé d'affaires a.i. (Costa Rica) (also on behalf of Bolivia, Chile, the Congo, the Dominican Republic, Gabon, Guatemala, Nicaragua, Panama, Papua New Guinea, Solomon Islands and Vanuatu); Jerrol Thompson, Minister of Telecommunications, Science and Industry (Saint Vincent and the Grenadines) (on behalf of the States Members of the United Nations that are members of the Caribbean Community); Ferguson Theophilus John, Minister of Physical Development, Environment and Housing (Saint Lucia); Abdul Hakim El-Waer, Secretary of the Environment (Libyan Arab Jamahiriya); Fekitamoeloa 'Utoikamanu, Permanent Representative of Tonga; Arjun Bahadur Thapa, Deputy Permanent Representative of Nepal; George Talbot, Chargé d'affaires a.i. (Guyana) (on behalf of the States Members of the United Nations that are members of the Rio Group); Edward Osei Nsenkyire, Chief Director, Ministry of Environment and Science (Ghana); and Aboubacry Demba Lom, Director of National Planning and Regional Planning Coordination (Senegal).

138. At the 21st meeting, on 12 May 2006, the Commission continued its ministerial dialogue on the topic "The way forward", and a statement was made by Carmen María Gallardo Hernández (El Salvador).

139. At the same meeting, the Vice-Chairman made a statement and introduced part II of the Chairman's summary.

140. Statements were then made by the delegations of South Africa (on behalf of the States Members of the United Nations that are members of the Group of 77 and China), Austria (on behalf of the States Members of the United Nations that are members of the European Union), Costa Rica, Brazil, Saudi Arabia, Cape Verde (on behalf of the States Members of the United Nations that are members of the Alliance of Small Island States), Japan, Egypt, Argentina, Switzerland, China, India, Australia, the Sudan, Kuwait, Nigeria, Azerbaijan and Mauritius.

141. At the same meeting, the Vice-Chairman read out a statement on behalf of the Chairman.

142. Statements were then made by the representatives of each of the major groups: children and youth; business and industry; farmers; indigenous people; local authorities; non-governmental organizations; scientific and technological communities; workers and trade unions, and women.

Chairman's summary

143. The Chairman's summary reads as follows:

Part one

I. Opening of the session: report on intersessional events

1. The 14th session of the Commission on Sustainable Development was opened on the morning of 1 May 2006 by the Under-Secretary-General for Economic and Social Affairs, who read a message from the Chairman, Aleksi Aleksishvili, Minister of Finance of Georgia, informing delegates that he was unable to attend due to a national emergency in his country. The Commission elected Azanaw Tadesse Abreha of Ethiopia as Vice-Chair and invited him to serve as Acting Chair for the morning meeting.

2. The Acting Chair read out the opening statement of the Chairman, in which he emphasized that the thematic cluster for the 2006/2007 cycle — energy for sustainable development, industrial development, air pollution/atmosphere and climate change — are unparalleled in their importance for achieving sustainable development goals. The issues are complex and interlinked and because of this, Chairman Aleksishvili and the rest of the Bureau had devised an organization of work for this review session following a more integrated approach than in previous sessions. He called for a frank and fruitful exchange of ideas on the barriers and constraints as well as progress made on the thematic cluster of issues, which would provide a sound basis for policy considerations next year.

3. In considering the provisional agenda and organization of work of the session, a delegation speaking for the Rio Group and the Caribbean Community expressed their concerns regarding the organization of work recommended by the Bureau and the documentation for the Commission at its fourteenth session. They indicated their preference for a balanced allocation of time for each of the four issues in the thematic cluster. The organization of work was adopted by consensus with the understanding that it did not constitute a precedent for future sessions.

4. In his opening remarks, the Under-Secretary-General noted a number of noteworthy achievements since the 2002 World Summit on Sustainable Development, but recognized that much work lies ahead. He highlighted a few priority areas, which included: access to modern energy services, energy security, renewable energy technologies, emissions limitation and adaptation to climate change, cleaner production methods, and modern industrial development in a globalizing world, noting the interlinkages among all the issues in this two-year cycle. He concluded that history has shown that environmental issues cannot be postponed until later in the development process.

5. Reports on 12 intersessional events held between June 2004 and April 2006 that contributed to the Commission's fourteenth session were presented by delegations (see annex II).

II. Overall review: general statements

6. In their statements on the overall review of progress in the implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21, the Johannesburg Plan of Implementation and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, delegations welcomed the review session as an opportunity to further identify new, dynamic ways to promote the integration of the three components of sustainable development — economic development, social development and environmental protection — as interdependent and mutually reinforcing pillars. Some delegations noted the need for a long-term integrated approach to achieving sustainable development goals.

7. The thematic cluster of issues for this implementation cycle — energy for sustainable development, industrial development, air pollution/atmosphere, and climate change — is of paramount importance for the achievement of sustainable development. They are complex topics and are intricately related. The Commission should identify the barriers and constraints that all countries, particularly developing countries, are facing in implementing the agreed goals and targets in these areas. The relevance of principle 7 of the Rio Declaration on Environment and Development on common but differentiated responsibilities of States was stressed by many. The importance of an integrated but balanced consideration of the issues was recognized by all delegations. Developing countries reiterated their concerns expressed in a letter to the Chair of the Commission at its fourteenth session calling for equal and balanced treatment of the four themes in the programme of work and a balance in the documentation, in accordance with the decisions of the Commission at its eleventh session.

8. Many speakers noted that progress had been achieved in some areas under review, but acknowledged that progress has been slow and uneven. In many areas, natural resources are increasingly being depleted, economic growth is slow and social conditions are worsening. It was stressed that poverty eradication remains a global priority and an overarching objective of sustainable development. In this regard, the concern was expressed by many that the implementation of the internationally agreed development goals, including those contained in the United Nations Millennium Declaration, and reaffirmed in the 2005 World Summit Outcome, and other major United Nations conferences, may not be achieved by the 2015 target date.

9. A number of speakers urged that the exchange of experiences at this session focus on success factors that have contributed to effective programmes, projects and policies. They also called on delegations to bear in mind the costs of inaction on these critical issues.

10. Most speakers highlighted the particular conditions and special needs of the developing countries, especially those in sub-Saharan Africa, small island developing States, least developed countries and landlocked developing countries.

In many cases, these special needs have been further complicated by the tragic impacts of natural disasters, including severe weather events.

11. With regard to Africa, many speakers stressed a cross-cutting issue on the agenda of all sessions of the Commission, the enormous challenges facing this continent in its efforts to achieve sustainable development, including in the thematic areas under review at the Commission's fourteenth session. Representatives from African countries called for effective partnerships with their development partners, including through regional development initiatives such as the New Partnership for Africa's Development (NEPAD).

12. Another cross-cutting issue of special concern to the Commission at its current session was the sustainable development of small island developing States. Representatives from small island developing States welcomed the decision of the Commission at its thirteenth session to devote one day of every review session to a review of the implementation of the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, focusing on that year's thematic cluster, as well as on any new developments regarding the sustainable development efforts of small island developing States. They stressed that mitigation and adaptation must proceed in tandem, as doing one without the other made little sense.

13. Most countries cited the need for more financial resources, technology transfer and capacity-building — the means of implementation — as the most crucial cross-cutting issue necessary for sustainable development and comprising the major challenges and constraints for developing countries. They called on the international community to fulfil its commitments in these areas, including the Monterrey commitments. It was pointed out that, although development aid had reached an all-time high, it remained at a historically low level as a share of donor country income. Concern about inadequate funds for GEF, especially for its fourth replenishment, was also expressed by many countries.

14. Speakers highlighted other cross-cutting issues that needed to be addressed, including changing unsustainable patterns of consumption and production, gender equality, health and protecting and managing the natural resource base of economic and social development. An integrated approach to the planning and management of land resources, combating desertification, conservation and sustainable use of biological diversity, managing fragile ecosystems, promoting sustainable agriculture and rural development and the environmentally sound management of toxic chemicals and hazardous and solid wastes were all issues identified as deserving adequate attention.

15. Some delegations stressed that good governance at all levels and trade liberalization is fundamental to achieving sustainable development. On governance, it was considered essential that institutional and regulatory structures be transparent and accountable and fight corruption.

16. On trade liberalization, they felt that an open and non-discriminatory multilateral trading system is needed so that all countries, including developing countries, can attain sustained economic growth and self-sufficiency. They called for the successful and timely conclusion of the Doha development round of trade negotiations.

17. In identifying lessons learned and best practices to achieve the Johannesburg Plan of Implementation goals, the usefulness of a matrix to help organize such information was noted. The importance of basing an objective analysis on concrete data was also stressed. Several speakers supported the further development and expansion of partnerships, as concrete additional tools for the implementation of sustainable development goals and targets. It was noted, however, that only a few of the numerous partnerships which have been implemented in developing countries since the World Summit on Sustainable Development have actually resulted in any significant transfer of technologies, financial resources or capacity-building. The private sector was encouraged by many speakers to participate in these ventures, along with Governments and international and non-governmental organizations. A report was presented on the work of the Mountain Partnership, established at the World Summit on Sustainable Development, which highlighted some key challenges that have emerged in coordinating the more than 130 stakeholders involved. It was announced that a global partnership on bio-energy would be launched at this session of the Commission.

18. Several speakers referred to the successful conclusion of the previous Commission cycle (2004-2005), which focused on water, sanitation and human settlements. They expressed their support for follow-up measures and noted with appreciation the secretariat's work in developing the Water Action and Networking Database to facilitate the implementation of the water goals.

19. It was noted by many delegations that the Commission's fourteenth session was taking place at a time of ongoing reforms in the United Nations. Developing countries, in particular, expressed the view that the United Nations provided an essential platform for them to raise issues that not only concern them but are essential to their survival. It was also stated that the Commission is an extremely important part of the United Nations system for all countries, particularly developing ones. Some delegations noted that the Commission had undergone a critical shift in its work since the World Summit on Sustainable Development with its focus on action and demonstrating results, which could serve as an example elsewhere in the United Nations system. It was also suggested that, in moving from this review session to the adoption of policy decisions next year, it would be important to start discussions now on appropriate follow-up arrangements that could be agreed at the fifteenth session of the Commission.

III. Thematic discussions: energy for sustainable development, industrial development, air pollution/atmosphere and climate change*

A. Introduction

20. Achieving sustainable development goals requires energy use and industrial development but, in turn, they are major contributors to air pollution, atmospheric problems and greenhouse gas emissions. Despite some progress in diversifying the energy supply, fossil-fuel based energy resources will continue to play a dominant role in the supply mix for the foreseeable future. Efforts to develop cleaner energy

* The following summary represents views expressed during the interactive thematic discussions; it does not reflect a consensus.

methods, technologies, including advanced fossil fuel technologies, and measures are important for achieving Agenda 21 and the goals of the Johannesburg Plan of Implementation.

21. Access to energy is critical to achieving sustainable development goals and the Millennium Development Goals, in particular the Millennium Development Goal target on poverty reduction. Ensuring access to modern energy services for cooking and heating can have multiple benefits, including lower indoor air pollution and improved health, better education and income opportunities for women and children, and more efficient use of energy resources. Access to electricity at central points in rural and remote communities such as in schools, clinics and hospitals would also contribute significantly to achieving these goals. Affordability is an important aspect of the access issue, including in urban areas.

22. Energy efficiency provides a win-win opportunity with many benefits including greater industrial competitiveness, better energy security and substantial reductions in carbon dioxide and other greenhouse gas emissions in a cost-effective way. There is considerable scope for improving energy efficiency in households, the transport sector and industry, including the energy industry, by changing consumption and production patterns, behaviours and lifestyles.

23. There was overall agreement that a judicious mix of energy from all sources will be needed in order to meet the rising global energy demand with optimal efficiency, with advanced, cleaner fossil fuel technologies playing an important role. The importance of developing renewable sources of energy was highlighted, while some participants also noted that it will be some time before renewable energy sources are able to deliver the large amounts of energy required for bulk energy needs for most countries. Appropriate policies and incentives and providing more resources for research and development can shorten this time.

24. Establishing a strong and competitive industrial sector for economic growth and social development was strongly supported. Particular emphasis was given to the contribution that industrial development has made to poverty reduction. The wealth of experience shared illustrated that there is no "one-size-fits-all" pattern of industrialization. Industrial development needs to be built upon the country's specific development conditions and needs, which also shape the policies and measures taken to advance industrial development in the context of sustainable development.

25. There are a wide range of sources of air pollution, including indoor air pollution, transport systems, energy generation plants, industry, agriculture, and waste management. Sources, levels and scales of air pollution vary greatly among countries, requiring that the specificities of each be taken into account in efforts to mitigate air pollution. It was noted that the level of ambient air pollution in rural areas of developing countries, which is often found to be much higher than assumed, can be aggravated by wind-transported air pollutants from urban and industrial areas.

26. Climate change, it was noted, needs to be seen in the broader context of sustainable development. Most country representatives noted that climate impacts such as higher temperatures, sea level rise, extreme weather events, the spread of diseases and melting ice-caps will affect not only the environment but also social and economic systems, thus threatening agricultural production and food security,

fisheries, coastal zone management and public health. The importance of integrating mitigation measures into energy and other sectoral policies in order to exploit synergies and complementarities was emphasized.

27. Most country representatives expressed concern that climate change has adversely impacted the poorest and most vulnerable, including indigenous people, who have contributed least to climate change. Since climate change can exacerbate poverty, its impacts could undermine the achievement of the Millennium Development Goals and poverty alleviation efforts. Adaptation, therefore, becomes an urgent requirement for vulnerable countries, the least developed countries and small island developing States.

B. Obstacles and constraints

1. Energy for sustainable development

28. Obstacles to improving access to modern energy services, including modern cooking and heating fuels and electricity, include high equipment costs, at times increased by tariffs, insufficient human and technical capacity to sustain and maintain equipment, inappropriate subsidies and an inability or unwillingness to pay for services. These obstacles are particularly acute in some least developed countries and small island developing States. The high cost of extending connections to the national electricity grid to poor communities, especially in rural and remote areas, poses a constraint to improving access to electricity.

29. Recent high energy prices have added to these constraints, and contributed to increasing concerns about energy security. Escalating energy prices have an especially negative impact on energy importing and vulnerable countries, particularly the least developed countries and small island developing States, and some countries of Africa due to their heavy reliance on imported fossil fuels.

30. Insecure land tenure, including in informal settlements, was identified as a key barrier to expanding the provision of electricity in urban areas. In rural areas, the problem of how to scale up service delivery was identified as critical.

31. Women face particular barriers with regard to high costs of energy, lack of training and education as well as lack of awareness about energy options. Data disaggregated by gender is often not available, making the assessment of needs and evaluation of projects aimed at women and children difficult.

32. Barriers to improved energy efficiency include weak energy regulations and enforcement, lack of public awareness, lack of incentives, lack of technology, technological knowledge and capacity, lack of financing, fragmented government decision-making and lack of competition among energy suppliers.

33. Developing countries lack information on renewable and advanced energy options. The high capital costs associated with renewable energy technologies and the absence of affordable financing constitute important barriers to the use of modern, efficient and sustainable energy technologies, particularly in developing countries.

34. The lack of appropriate institutional and legal frameworks, including the lack of accountability and transparency, and inadequate capacities are barriers to the promotion of renewable and advanced energy technologies, including advanced

fossil fuel technologies. Without such frameworks, it is not possible to create an enabling environment, stimulate markets and provide the necessary incentives.

35. Insufficient research and development funding and low levels of appropriate technical skills affect the ability of developing countries to innovate, absorb and use advanced energy technologies, including advanced fossil fuel technologies.

36. Insufficient attention has been given to evaluating and publicizing the benefits of improved energy efficiency, renewable energy and other energy policies and to evaluating policy effectiveness and the costs of not taking action to address energy needs.

2. Industrial development

37. Intense global competition in low-technology, high-volume manufacturing was identified as constraining industrial development in a number of developing countries, particularly small developing countries and small island developing States. The least developed countries are particularly vulnerable given their high degree of market specialization, although these developments have encouraged some countries to pursue greater product diversification and targeting of high-value-added niche markets.

38. An inadequate enabling environment in many countries, in addition to constraining domestic investment, may inhibit foreign direct investment that tends to be concentrated in a few countries and focus on extractive industries.

39. Tariff escalation and trade barriers — including non-tariff barriers — to industrial products of particular interest to developing countries, notably the least-developed countries, are constraints on their industrial development.

40. Lack of good governance at the international and national levels, in both the public and private sectors, was seen as an impediment to industrial development.

41. The dynamics of global competition, combined with technological change, have meant that industrial sectors in many countries are undergoing restructuring, thus increasing requirements for capital, new equipment and new skills.

42. The industrial sectors of many countries are becoming less labour-intensive, so the job-creating benefits of industrial development become harder to realize, especially for low-skilled workers.

43. Competitive pressures can cause industrial enterprises to utilize the cheapest energy sources and other inputs, even if they create more pollution. The fear of losing global market share may drive producers into choosing unsustainable options, including in terms of working conditions.

44. The unreliability of energy supply, particularly in the least developed countries, constrains industrial development by increasing the cost of energy and reducing energy efficiency, resulting in high energy costs per unit of production.

45. The use of obsolete technology is a barrier to achieving the quality standards required in export markets. Both technology to produce high quality products and foreign certification of that quality are expensive.

46. Institutions providing technical support to industries are weak or non-existent in many countries, making it difficult for domestic enterprises — particularly micro-,

small- and medium-sized enterprises — to meet the quality and technical standards in major export markets. Such support includes standards and metrology, quality assurance, testing and certification and market intelligence.

47. Access to trade and investment finance is often inadequate, with micro-, small- and medium-sized enterprises especially disadvantaged. Micro-, small- and medium-sized enterprises often are not convinced of the financial gains from investment in cleaner production technologies, making it difficult to establish revolving funds to promote commercial lending for the purchase of cleaner technology.

48. Africa, it was noted, faces particular constraints to its industrial development, including lack of access to markets, weak infrastructure, high taxes, heavy regulation, and institutional weakness, loss of valuable talent to brain drain, inefficient production methods and inadequate product quality. The inertia of development partners was also seen as a constraint.

49. In many developing countries, there is a strong dichotomy between the modern sector — where large producers are linked to global supply chains — and the vast informal, traditional sector, which has been largely untouched by modern technologies and international market disciplines.

3. Air pollution/atmosphere

50. Inadequate public understanding of the health impacts of air pollution, as well as lack of political will, constitutes a barrier to effective action to combat air pollution.

51. Fragmented responsibility for regulating, monitoring and enforcing emission controls among uncoordinated agencies makes an integrated, intersectoral approach to combating air pollution difficult.

52. The efforts of many countries in monitoring air quality and reducing air pollution are also hindered by a lack of technical information and data, appropriate technology, technical capacity and research and development capabilities, as well as the substantial cost of monitoring and abatement technologies. Failure to share the results of the monitoring of specific air pollutants with the general public and to include all stakeholders in the decision-making process is an obstacle to improving air quality.

53. The rapid growth of private vehicle ownership in some developing countries, driven by population growth, economic growth and urbanization, is leading to increased urban air pollution. In others, a fleet of old vehicles produces high levels of pollution. The higher cost of new vehicles with better fuel efficiency and pollution controls can be a constraint to more rapid turnover of the vehicle fleet.

54. Small countries without national vehicle production have difficulty influencing manufacturers concerning vehicle emission characteristics.

55. Poor quality fuels, particularly with high sulphur content, hamper the introduction of clean vehicle technologies such as catalytic converters, particularly in developing countries.

56. The long-term health effects of octane-enhancing additives, such as methylcyclopentadienyl manganese tricarbonyl, are still not adequately known.

57. With respect to industrial air pollution, many countries face difficulties in regulating emissions from small- and medium-size enterprises, which collectively have a major impact.

58. There is also a lack of enforcement in some countries in controlling illegal trade in ozone-depleting substances. Financial resources for ensuring compliance with international obligations are inadequate.

59. The long-term nature of capital equipment turnover in industry, particularly in the power sector and heavy industry, "locks in" polluting infrastructure and equipment for decades.

60. Traditional biomass cooking and heating result in indoor air pollution that harms the health of women and children, while gathering fuel wood consumes time that could be used for income-generating activities or school.

61. The dispersed nature of indoor air pollution sources and the issue of fuel affordability pose obstacles to the adoption of cleaner domestic fuels and improved cooking facilities.

62. Poverty can be a barrier to mitigating air pollution since it compels people to engage in polluting activities to generate income, such as open-air burning of automobile tires to retrieve recyclable metals.

63. The lack of clear authority for regulating air pollution from international shipping and aviation is an obstacle to reducing pollution from those sources.

64. The lack of scientific research on the health impacts of many pollutants, as well as the limited research and development capabilities of many developing countries for improving their air pollution monitoring and abatement capabilities, is a serious barrier to reducing the health impacts of air pollution.

4. Climate change

65. Rapid and more frequent climatic changes are now becoming increasingly apparent and in the next 5 to 20 years, more adverse impacts are expected, while current investments to mitigate the causes are said by some to be negligible. The high cost of scaling up the necessary investments and motivating action by all countries to respond to climate change was noted as a major constraint.

66. The lack of clear market signals discourages private sector investment. Furthermore, there is a lack of urgency in some quarters regarding the need for more forceful mitigation and adaptation measures, which in turn constitutes a barrier to fostering the private sector's increased participation in concerted global action to address the problem.

67. Both mitigation and adaptation are necessary components for a comprehensive long-term response. Inadequate capacity to develop and implement adaptation plans is a constraint, especially for those countries that are highly vulnerable to climate change impacts, which threaten the very survival of some small island developing States.

68. Diverting resources to cope with climate-related emergencies, including natural disasters, in developing countries, where these resources could otherwise be devoted to other investments and development needs, poses a major constraint to achieving Agenda 21 and Johannesburg Plan of Implementation goals.

69. The relatively high costs of Clean Development Mechanism projects involving renewable energy is a barrier to their greater use, some noted.

70. Inadequate data-gathering, analysis and prediction is an obstacle to understanding and addressing climate impacts. This includes data on: (a) climate change impacts at the regional and national levels; (b) the short-term and long-term costs of inaction; and (c) impacts on the least developed countries and small island developing States. Africa, in particular, faces constraints due to data and information gaps.

71. Lack of financial, technical and institutional capacities in developing countries, particularly the least developed countries and small island developing States, to address climate change and mitigate its adverse effects is a major obstacle to achieving economic growth and alleviating poverty.

72. The inadequacy of funding currently available under the multilateral mechanisms to support adaptation measures in vulnerable countries was noted by many as a major constraint.

C. Lessons learned/best practices

1. Energy for sustainable development

73. Including energy access in strategies and plans at the national and regional levels has ensured greater emphasis on access issues within national priorities and budgets, as well as greater regional cooperation. Energy efficiency goals have also been included in some national strategies for achieving the Millennium Development Goal of poverty alleviation.

74. Sound and predictable legislation, regulatory frameworks and tax policies have been instrumental in promoting private investment in the energy sector and improving access to modern energy services for cooking, heating and electricity in rural and urban areas.

75. Alternatives to traditional biomass cooking and heating, such as liquefied petroleum gas or improved biomass cook stoves, have provided notable economic and social benefits at a relatively low cost. The required investments have been relatively modest and have attracted donor financing when they were given priority in development and poverty reduction plans.

76. Renewable energy technologies, including modern cook stoves, bio-gas digesters, bio-fuels, geothermal, wind, solar photovoltaic panels and mini-hydroelectric facilities have been successfully employed to provide access to modern energy services in a number of countries, including in rural areas and in some small island developing States.

77. Stakeholder and community involvement, particularly by women, has proven an essential ingredient for successful policy and regulatory development and implementation. Projects and activities that have involved women beneficiaries in their conception, design and implementation have had a greater chance of success.

78. Energy access projects that included income-generation components have produced positive results. Including improved education, income opportunities and the social benefits of avoiding premature deaths and poor health for women and

children in cost-benefit analyses has provided for more accurate assessments of project potential and viability.

79. Success in providing access to electricity in rural areas has involved, in some cases, granting concessions to the private sector and, in others, direct public management with costs shared by Government, donors, communities and households. Both approaches utilized decentralized, off-grid electricity systems, often with renewable energy technologies.

80. Energy efficiency has been shown, in many cases, to be the cleanest and cheapest energy resource and contributor to reducing air pollution and greenhouse gas emissions. The social benefits of improved energy efficiency, including job creation and reduced public health costs, have also been recognized. Among measures found to be effective in promoting energy efficiency are mandatory performance standards, appliance and building standards and labels, financial incentives for technology improvements and the elimination of perverse incentives whereby energy utilities maximize profits by maximizing electricity sales.

81. Demand-side management programmes to improve energy efficiency and reduce unnecessary demand have been enhanced with the active involvement of non-profit organizations and energy service companies. Measures and regulations that provide or strengthen market signals have been very effective in encouraging energy efficiency. The maintenance and servicing of equipment is important for maintaining energy efficiency.

82. Energy efficiency and sustainable consumption and production activities in some countries have included more sustainable products, sustainable procurement, sustainable lifestyles and sustainable buildings, which are considered mutually reinforcing and synergistic.

83. Standards and labelling programmes for appliances, buildings and other products have been cost-effective in improving energy efficiency. "World best" standards can easily be used to establish national standards. Energy efficiency achievements have been most notable in countries that have made it part of their national economic development strategy.

84. Economic incentives and disincentives have been effective in some countries in encouraging energy efficiency in industry. Negotiated targets for industrial energy use have also been successfully employed in several countries, as have energy efficiency codes for buildings.

85. Efforts to reduce natural gas flaring and venting and promote energy efficiency investments in the petrochemical and refinery industries, in some cases through cooperation among government, industry and non-governmental organizations (NGOs), have produced positive results.

86. The development of natural gas resources and infrastructure has contributed to diversifying the energy supply mix in some countries, as well as helping to reduce air pollution and greenhouse gas emissions.

87. The development and application of advanced fossil fuel technologies, such as carbon sequestration, are beginning to be applied in several countries. Partnerships have provided important opportunities for international cooperation, exchange of information and technology transfer.

88. Energy planning, legislation and technology choices that conform to local and national conditions, capacities and circumstances have proven to be most effective. Experience with the introduction of other innovations such as cell phones and other information technologies may provide valuable lessons for electrification.

2. Industrial development

89. Social and political stability, the rule of law, a predictable policy and regulatory framework, adequate education and training of the labour force and investments in power, water and transport infrastructure have proven crucial to industrial development.

90. Given favourable international conditions and a suitable domestic enabling environment, industrial development has made an important contribution to poverty eradication.

91. More sustainable use of natural resources in industry has resulted in reduced costs, increased competitiveness and reduced environmental impacts. Resource pricing that reflects the full costs of resource extraction has proven critical. Industrial development has been shown to work best when it takes into account the carrying capacity of the environment.

92. Large industrial enterprises with substantial supply chains have been able to increase their own competitiveness by using their technical capabilities to assist their suppliers in improving energy and resource efficiency and sharing the financial gains.

93. Availability of technical support services has proven particularly important to micro-, small- and medium-sized enterprises, which would otherwise be at a competitive disadvantage, given high transaction costs and other fixed costs, such as those related to marketing, new market development and certification.

94. As technology and management needs are often specific to a particular industrial sector but common within that sector, industry associations have played a valuable role in building members' capacities. Workers and their organizations have also contributed importantly to the improved environmental and social performance of enterprises, including on the job health and safety. In this regard, International Labour Organization core labour standards were identified as being instrumental.

95. The welfare of workers has been enhanced during times of industrial restructuring through retraining, redeployment and social protection measures.

96. With increasing globalization, companies that comply with norms for corporate social and environmental responsibility have in some cases been able to gain easier access to global supply chains.

97. Efforts to change unsustainable patterns of consumption and production have benefited from addressing industrial production and consumer behaviour in an integrated way. Industrial ecology (symbiosis) has proven a useful method to reduce resource consumption and waste generation by using one company's waste as another company's input. The "3Rs" concept — reduce, recycle, reuse — is another integrated approach that has also been used.

98. Education and awareness-raising campaigns building on local cultural values have helped change consumer behaviour towards more sustainable lifestyles and

have assisted people in making informed product choices. The consumption choices of government agencies have proven to have an important influence on the development of markets for more sustainable products.

99. Industry has been increasingly active in designing and producing improved products to meet consumer preferences for greater energy efficiency, recyclability and a smaller ecological footprint.

100. Corporate social and environmental responsibility has gained in importance with globalization. Many companies have already integrated this concept into their business operations, including through sustainable supply chain management, sustainable product development and engaging in community-driven public-private partnerships.

3. Air pollution/atmosphere

101. Air pollution has been effectively reduced through an intersectoral approach including policies covering energy, transportation, waste management, health and climate. Effective policies to address air pollution have built on the interlinkages between air pollution, climate change, industrial development and energy for sustainable development.

102. The modernization of thermal electric power plants and fuel switching — from coal to natural gas — has improved local and regional air quality in many cases.

103. International cooperative mechanisms such as conventions and international legal agreements have been shown to be effective in addressing transboundary and long range air pollution.

104. Establishment, monitoring and enforcement of air quality standards are important measures that are increasingly being taken to mitigate air pollution and protect public health and the environment.

105. Many municipalities have reduced congestion and air pollution through the construction of pedestrian walkways, separate bicycle and bus lanes, as well as modern, below and above ground, urban mass rapid transit systems.

106. In reducing energy consumption and air pollution and greenhouse gas emissions from motor vehicles, countries have made progress in (a) improving fuels and vehicle fuel efficiency and emission standards; (b) requiring catalytic converters and vehicle inspection and maintenance; (c) phasing out leaded gasoline; (d) introducing hybrid and flex-fuel vehicles in some countries; and (e) implementing long-term measures to promote a modal shift from road to rail transport.

107. The elimination of leaded gasoline in many countries has been a recent success story, notably in sub-Saharan Africa.

4. Climate change

108. An integrated approach to climate change was found to be essential for an effective and comprehensive response to this phenomenon and for achieving Agenda 21 and Johannesburg Plan of Implementation goals, as climate change will impact all three of the dimensions of sustainable development.

109. Mainstreaming climate change concerns, including mitigation, adaptation, response measures and the issues of climate change risks and impacts, into national

development planning, Poverty Reduction Strategy Papers and sustainable development strategies has worked well for several countries. National sustainable development strategies can serve as instruments for integration, including the incorporation of social impacts of climate change into response measures. Time-bound targets, financial incentives and other policy measures have been effective in some countries.

110. National institutional capacity-building by several developing countries has been part of their recent efforts towards national climate risks assessments and the development of climate change mitigation and adaptation strategies.

111. Levelling the playing field in the energy sector, in part by reducing distorting subsidies, was found to be important for promoting renewable energy and reducing greenhouse gas emissions.

112. International partnerships, including World Summit on Sustainable Development partnerships, have contributed to climate-related capacity-building activities in some countries. These have included efforts to enhance energy efficiency, renewable energy, cleaner fossil fuel and carbon sequestration technologies.

113. While adaptation is a significant component of the response to climate change, it has limits and cannot be considered a substitute for mitigation. However, adaptation remains an urgent need for vulnerable countries, particularly the least developed countries and small island developing States. The co-benefits of some mitigation measures have yielded positive development outcomes.

114. The impact of recent severe weather events in various parts of the world has demonstrated the value of current investment in preventive measures as a way to avoid large expenditures on emergency measures later on.

D. Means of implementation

115. Government funding in developing countries, even if supplemented by official development assistance, was seen as insufficient to meet the large energy investment needs of developing countries, in particular African countries. Private sector funding is essential. Government's role has been critical to success in many cases, creating a policy environment conducive to private sector involvement through sound legislation, clear and transparent rules, predictable tax policies and risk-sharing mechanisms. The public sector has also provided seed money as leverage to attract private sector funds. It was noted, however, that even when a Government has done its best to create conducive framework conditions, investment has not necessarily been forthcoming.

116. It was noted by some countries that industrialized countries are currently not meeting their official development assistance commitments. Meeting the international commitments on official development assistance, including those agreed in Monterrey, opening up new trade opportunities through the removal of trade barriers to industrial and agriculture products and implementing debt relief measures were cited as critical for developing countries, particularly in Africa, the least developed countries and small island developing States, to meet the goals and targets in the Johannesburg Plan of Implementation on energy for sustainable development, industrial development, air pollution/atmosphere and climate change.

117. The positive impact that greater donor cooperation at the national and local levels could yield for harmonizing official development assistance with national development priorities and improving the predictability and effectiveness of official development assistance flows was highlighted. Many investment projects, particularly in the energy sector, are capital-intensive and call for stable financing over an extended period.

118. Loans and targeted subsidies can provide solutions to the high upfront costs of access to modern energy services by the poor. Financing options include microfinance schemes revolving funds and loans with extended payback periods. In-kind contributions could also be an option.

119. Targeted energy subsidies continue to be needed to ensure energy access for the poor. With higher world energy prices, however, many Governments are facing a difficult choice of whether to cut energy subsidies at the risk of public discontent or reduce other budgetary expenditures. It was estimated that the increase in energy import bills in 2005 of heavily indebted developing countries was several times greater than the total debt relief agreed at the G-8 summit at Gleneagles.

120. Microfinance and other small-scale financing schemes may also be able to encourage local entrepreneurs, including women, to start businesses for the provision of decentralized energy services as well as other micro-, small- and medium-sized enterprises.

121. Sinking funds have been used by some countries to provide grants to industry for investment in cleaner production technologies, but these are unsustainable without government or donor replenishment. Workable revolving funds would depend on convincing enterprises, particularly micro-, small- and medium-sized enterprises, of the business sense of such investments. An initial focus on "no cost" and "low cost" cleaner production options can be helpful in this regard.

122. Public-private partnerships, including the World Summit on Sustainable Development partnerships, have had success in leveraging scarce public and private sector resources, promoting multi-stakeholder involvement and facilitating technology diffusion. The synergies of cooperation between public, private and finance sectors need to be encouraged.

123. The World Bank has inaugurated a Clean Energy and Development Investment Framework, which is designed to guide financing for energy access, incremental costs of low-carbon energy technologies and climate change adaptation.

124. Investments in energy efficiency and renewable energy projects have often had particular difficulty attracting commercial financing. GEF has been working with the banking sector in several countries to support an extension of financing to such projects. Partial loan guarantees were cited as one form of innovative financing to leverage private lending for energy efficiency and renewable energy investments.

125. Ensuring adequate funding for GEF and streamlining its procedures could enhance its effectiveness.

126. The Clean Development Mechanism could also foster investment by the private sector in the financing of energy efficiency and renewable energy projects. Improving and simplifying the Mechanism's procedures could help to address community energy and sustainable development needs. Capacity-building efforts would enable developing countries, particularly African countries and small island

developing States, to benefit more fully from the Mechanism. Likewise, international financial institutions, including the International Finance Corporation and regional development banks could be involved.

127. Developing countries, particularly African countries and small island developing States, could benefit from increased international cooperation in terms of technology transfer and institutional and technical capacity-building, including support from multilateral financial institutions.

128. The transfer and dissemination of environmentally sound technologies at affordable prices is important for helping developing countries achieve sustainable development. The protection of intellectual property rights, strengthening of science and technology cooperation and promotion of research and development in developing countries can be effective in promoting technology development, adaptation and transfer. Government and market incentives for clean technology adoption and the efficient use of energy and other natural resources would facilitate such transfer.

129. Global supply chains and other linkages between large and small enterprises, such as mentoring programmes, can be an important conduit for the transfer of sustainable production and product technologies and can promote cleaner production by companies involved in such supply chains in developing countries.

130. The continued need for training, capacity-building and promoting greater awareness regarding the advantages of energy efficiency in industry, Governments and households was highlighted. Capacity-building and training aimed specifically at decision makers would enable better decision-making regarding public transport and infrastructure projects in developing countries.

131. At the enterprise level, capacity-building and training in a number of areas would be beneficial. In the energy sector, developing feasible business plans as well as the maintenance, operation and repair of energy technologies was thought to be important. In the industrial sector, managerial training for micro-, small- and medium-sized enterprises in a range of skills, including operations management, marketing, financial management and negotiation with customers and suppliers was highlighted. Technical training of engineers and workers is also considered critical to micro-, small- and medium-sized enterprise competitiveness. A number of development cooperation efforts are meeting some of these needs, and the private sector has been an important actor with regard to cooperation along supply chains.

132. Public education and awareness-raising are key for promoting sustainable consumption and production patterns, along with legislation, regulation and voluntary efforts by households, business and industry and the public sector. A Task Force on Education for Sustainable Consumption has been launched to provide a bridge between the Marrakesh Process and the United Nations Decade of Education for Sustainable Development.

133. Strengthening South-South cooperation in the fields of renewable energy and advanced fossil fuel technologies was seen as a particularly promising option for information and data sharing for the benefit of other developing countries. Such cooperation would benefit from effective assistance through capacity-building and technological research and diffusion. North-South assistance and the involvement of the donor community in support of such South-South cooperation could greatly facilitate this enterprise. The Bali Strategic Plan for Technology Support and

Capacity-Building was mentioned as helpful in guiding cooperation on technology and capacity-building.

E. Continuing challenges

134. The importance of addressing the four themes of this cluster in the context of national sustainable development strategies and poverty reduction strategies remains an urgent priority. Breaking down general and long-term targets and goals into specific and short-term elements can help assess needs, identify priorities and attract investment and donor support.

135. The continuing need for applying better methods for identifying and assessing the social benefits of sustainable development projects, in particular health benefits, in order to improve project design, build public support and mobilize funding was recognized.

136. Securing private sector financing for investment in the energy and industry sectors, in particular for energy efficiency, renewable energy and cleaner production, remains a major challenge.

137. Good governance, anti-corruption measures and facilitating an enabling environment are critical for attracting private sector investment.

138. Enhanced international cooperation is needed in research and development on new cost-effective and sustainable industrial and energy technologies and in the broad dissemination of information on those technologies.

139. Countries face a continuing challenge in decoupling economic growth from greenhouse gas emissions.

140. International cooperation and technical assistance have supported a variety of demonstration projects, including energy audits and cleaner production systems, but sustaining and replicating those initiatives remains a challenge, in part due to lack of commercial funding.

141. There is a continuing need to change unsustainable patterns of consumption and production, with developed countries taking the lead. The Marrakesh Process, including the innovative and action-oriented task forces that resulted from the Second International Expert Meeting in Costa Rica, continues to make an important contribution to promoting sustainable production and consumption.

142. Enhanced policy coordination and integration and the involvement of all stakeholders, including through partnerships, is important for cost-effective efforts to address energy for sustainable development, industrial development, air pollution and climate change.

143. Strengthened capacity-building, education and awareness-raising, in particular among women and youth, have played an important role in planning and implementation at local and national levels.

144. The transition to cleaner energy technologies that are affordable remains essential. Global energy needs are so large and energy prices so volatile that all energy options will need to be explored, while preserving the integrity of the environment and ensuring socio-economic development.

145. Energy security, including for producers and consumers, remains a continuing challenge.

146. The institutional, legal and technical barriers to the cost-effective employment and diffusion of carbon capture and storage and carbon sequestration technologies will need to be addressed.

147. For the share of renewable energy to be increased in the total energy supply and for energy efficiency to be promoted, further effort is needed in the area of market support, through innovative financing mechanisms, increased investments, accelerated research and development, adequate legislation, education, awareness-raising and information and data exchange.

148. Overcoming the cost barrier in order to make renewable energy technologies economically competitive can be achieved through the scaling up of their production and deployment. Directing more carbon-abatement investment funds to small-scale rural renewable energy projects remains a significant challenge.

149. Nuclear energy technologies were identified by some as a possible supply option in interested countries. For those countries, the challenge lies in ensuring environmentally sound, socially acceptable and cost effective solutions and in addressing nuclear safety and spent fuel and waste management as well as public concerns on these issues.

150. More technological cooperation is needed on advanced energy technologies, including advanced, cleaner fossil fuel technologies.

151. Further and more effective cooperation among petroleum companies to eliminate gas flaring and venting would make an important contribution to reducing greenhouse gas emissions, conserving energy resources and ensuring a larger energy supply.

152. Concerted efforts are required to facilitate access to modern energy services, including fuels for cooking, heating and electricity. Problems such as scaling-up energy service delivery, paying for high up-front costs and raising awareness about energy options for the poor are major challenges for achieving sustainable development goals.

153. The expansion of modern energy services such as improved biomass and cleaner cooking fuels is important in order to mitigate indoor air pollution, protect the health of women and children and preserve the environment.

154. Gender considerations and addressing the energy needs of poor and rural women and children need to be an integral part of energy planning and energy projects. There is a need to put women at the centre of decision-making and management. Combining energy access with income generation projects and measures can have added benefits for women and their communities and contribute to overall sustainability.

155. Ensuring that developing countries benefit economically by involvement in the production and trade of biofuels is an important challenge.

156. A greater regional alignment of standards and labelling for consumer appliances, fuel quality and vehicular pollution controls is critical.

157. Increased focus on energy efficiency in the transport sector, including consideration of bus rapid transit systems and vehicle fuel efficiency standards will be needed.

158. While there are opportunities to achieve greater energy efficiency through tariff measures, these need to be balanced against accessibility and affordability concerns, particularly for the poor.

159. Innovative ways to upgrade vehicle fleets need to be devised so that the poor are not priced out of the market and left without adequate transport services for access to employment, health care and education opportunities.

160. Better coordination among national energy, transport and land-use ministries and between government and the private sector is needed. Better land-use planning, such as by locating residential, commercial and employment centres with a view towards energy savings needs attention.

161. Taking into consideration biodiversity in planning energy policies could help minimize the negative impacts of energy provision on biodiversity, forests and agricultural lands.

162. Ensuring an open global trading system for agricultural, industrial and environmental goods, such as energy efficiency and renewable energy products, remains a challenge.

163. The removal of trade barriers to industrial and agricultural products of importance to developing countries, in particular the least developed countries and small island developing States remains to be achieved. These barriers make it difficult to achieve the internationally agreed development goals, including those contained in the United Nations Millennium Declaration and reaffirmed in the 2005 World Summit Outcome and the outcomes of other major United Nations conferences. The successful conclusion of the Doha development round would, in principle, make an important contribution to this end.

164. Trade-related capacity-building is needed for developing countries, especially the least developed countries, to fully reap the benefits from trade. Among the priority areas mentioned were: trade diversification; negotiation with large multinationals; information on international product standards; testing and certification; and customs streamlining.

165. Improved understanding is needed in the area of creating an enabling domestic environment for investment, entrepreneurship and job creation, in particular in the energy and industry sectors, based on analysis of key obstacles. The creation of an investment climate facility for Africa to help improve frameworks for domestic and foreign investment could be a positive step forward.

166. Globalization and technological change will continue to pose a challenge to Governments, enterprises and workers as they seek to adapt to changing skill demands, to secure adequate retraining and re-employment opportunities for those displaced in the process and to provide new job opportunities for unskilled workers.

167. Further attention to international cooperation is needed in providing energy audits and technical assistance for the adoption of cleaner and more efficient production methods, including through national cleaner production centres.

168. The continued need for training, capacity-building and promoting greater awareness about the advantages of energy and resource efficiency in industry, Governments and households was highlighted.

169. Corporate social and environmental responsibility as a permanent feature of business culture and adopted by a broad cross-section of the international and national business communities as basic rules of good business was recognized by most State representatives as essential to the achievement of sustainable development goals.

170. Private sector companies interested in pursuing corporate social and environmental responsibility initiatives could benefit from information-sharing and networking services that would help them to identify promising projects in developing countries in which they might choose to invest.

171. Agriculture continues to be important to employment and gross domestic product in many developing countries, and there is a need to strengthen linkages between agriculture and industry, such as through the development of the agro-processing sector, including modern biofuels, and the production of inputs for more sustainable agriculture.

172. Addressing indoor air pollution and its health impact on women and children from the use of traditional biomass for cooking and heating remains an enormous challenge.

173. Enhanced subregional, regional and international cooperation and exchange of experience and information are needed to support and enhance the efforts of countries, particularly developing countries, to address air pollution in a comprehensive and integrated manner, taking into account the impact of the energy sector, industry, waste management, transportation and agriculture and a variety of measures, including legislation, monitoring, enforcement, incentives, technical support, education and training.

174. Further enhancement of synergies and cooperation among the relevant international institutions, including United Nations agencies and programmes, will assist in action to implement sustainable development goals.

175. Innovative approaches to urban planning, including land-use planning, public transportation systems and traffic management, are needed to manage urban air quality, with the involvement of all stakeholders in decision-making and implementation.

176. Methods to address air pollution from international shipping and aviation need further consideration and development.

177. Continuing challenges relating to the protection of the stratospheric ozone layer under the Montreal Protocol include the illegal trade in stratospheric ozone depleting substances and finding safe, affordable and environmentally sound alternatives to substances such as methyl bromide and hydrofluorocarbons.

178. Given the ongoing need for mitigation and adaptation measures by the least developed countries, small island developing States and other vulnerable developing countries, a global risk assessment could help raise awareness of the scale and scope of the challenges posed by climate change, within the scope of existing frameworks

and in the context of the United Nations Framework Convention on Climate Change.

179. There is a continuing need to build resilience and reduce the vulnerability of developing countries, particularly the least developed countries and small island developing States, including through the development and dissemination of drought-resistant crops and other adaptation technologies.

180. The dual-track process of international discussions on climate change continues to require support from all countries.

181. The responsibility of developed countries to take the lead in actions on climate change in line with the principle of common but differentiated responsibility was highlighted.

182. The international community faces the continuing challenge of the kind of incentive structure that might be considered to assist countries that adopt policies and take measures to protect their forests and the environmental services they provide.

183. Enhancing public awareness of climate change issues can help to influence personal behaviour as well as build support for public measures.

184. Addressing the special needs and situations of vulnerable countries, including least developed countries and small island developing States, with regard to technology transfer, financing and capacity-building activities for mitigation and adaptation to climate change continues to have great urgency for these countries. While small island developing States contribute the least to greenhouse gas emissions, they face the greatest risks from climate change.

185. The Clean Development Mechanism and Joint Implementation of the Kyoto Protocol are promising vehicles for enhancing support to national efforts to expand the use of renewable energy, energy efficiency and advanced and cleaner fossil fuel energy technologies, including through technology transfer. Action is required, however, on the high costs of the Clean Development Mechanism project cycle, some noted.

186. Enhanced international action and cooperation under the Convention on Climate Change and the Kyoto Protocol is important for many countries.

187. Strengthening the Global Climate Observing System can make an important contribution to assessing and responding to climate change.

IV. Regional discussions

188. The regional discussions were based on the outcome reports of the regional implementation meetings organized by the regional commissions in collaboration with the Division for Sustainable Development and the Department of Economic and Social Affairs prior to the Commission's fourteenth session and the presentations of invited panellists.

A. Africa

189. Participants emphasized that poverty eradication is a requirement for achieving sustainable development. With respect to energy for sustainable development in the

Economic Commission for Africa region, inadequate policy and legal frameworks and the overall low production of energy were identified as challenges and constraints. While tariff and non-tariff barriers to trade hampered progress in industrial development, advances had been made in the integration of rural development strategies into broader development planning. The meeting underlined the leadership of the African Union and, in particular, the pivotal role of NEPAD.

190. Although biomass continues to supply most of the energy used by people in sub-Saharan Africa, a number of delegations pointed out that the continent possesses abundant energy resources, particularly hydropower and other renewable energy sources that can be developed with the assistance of international cooperation. Exploiting those resources, however, will require considerable additional investment, strengthening of legal and regulatory frameworks and stronger cooperation with partners. Given the serious energy challenges facing the region, there was agreement that energy issues had in the past been insufficiently prioritized by both African Governments and development partners, as reflected in the absence of attention to energy in Poverty Reduction Strategy Papers. However, energy has been assuming new prominence on the continental agenda, as evidenced by the outcome of the first African Union Conference of Ministers Responsible for Electrical Energy, held in Addis Ababa from 23 to 24 March 2006.

191. Concern was expressed at the low level of industrial development in Africa, which, by all measures, falls well below the world average. In moving forward, however, African countries would have the opportunity to avoid past problems with industrialization by adopting cleaner production technologies.

192. It was noted that the adverse impacts of climate change affect African countries particularly severely, given their vulnerability and low adaptation capacity. The situation of African small island developing States, whose dependence on fossil fuel imports leaves them vulnerable to price shocks and slows the pace of sustainable development in rural areas, was also mentioned.

193. Given the special challenges faced by Africa, participants emphasized that expanding access to modern energy — in particular by rural electrification — industrial development, air pollution and climate change can be addressed through effective partnership, including enhanced and more efficient development aid, market access, support for capacity-building and transfer of technology. Initiatives to expand access to modern energy should incorporate the gender dimension. The value of exchange of experiences between regions on issues such as transboundary air pollution was noted.

B. West Asia

194. Participants noted the wide disparity in development and energy resources between oil producing and non-oil producing States. Even though oil and natural gas are the largest economic sector in the region, over 20 per cent of the population of the Economic and Social Commission for Western Asia member States still lack access to modern energy services. Providing energy for their own populations while ensuring that the international market is supplied with reliable energy will be a growing challenge.

195. Some delegations emphasized that meeting the global demand for affordable energy while reducing environmental impacts requires promoting both cleaner fossil

fuels and renewable energy in a reasonable, balanced manner. Advanced fossil fuel technologies, such as carbon capture and storage, will be important to reducing greenhouse gas emissions and will require technology development and transfer, including through development cooperation and technical assistance. Various projects have demonstrated the potential of renewable energy sources for servicing the urban and rural poor, including solar water-heaters and small-scale photovoltaic applications. Large-scale wind farms and combined-cycle solar thermal power plants also have potential, but renewable energy still represents only 0.1 per cent of total energy consumption in the region. Obstacles to increased renewable energy applications include lack of political support, high costs, limited investment capital and lack of awareness of new technologies.

196. A number of programmes to improve energy efficiency implemented in the region have led to the upgrading of local expertise. Policy options that have been used to improve energy efficiency and sustainability include: switching from oil to natural gas, upgrading the technology and transfer of advanced fossil fuel technologies for exploration and refining; improved regional cooperation on electricity grids and pipeline connectivity; and vehicle inspection and maintenance programmes in the transport sector. Four priority areas were identified for consideration: poverty alleviation through improved access to energy; improved efficiency of energy use; further efforts to discover new resources; and increased use of more environmentally sustainable fuels.

197. There was a recognized need for improved monitoring and air pollution control programmes, supported by technology transfer, partnerships and information-sharing. In the area of industrial development, greater private sector involvement, enhanced waste management supported by product life cycle assessments, a national clearinghouse for waste exchange and information-sharing on best practices were called for.

198. The need for substantial investments to meet increasing energy demand in the region was underscored, as was the important role of regional banks. Microcredit schemes and other innovative financing methods are needed to support increased access to energy services in rural and remote areas. Delegations viewed regional and international funding as essential.

C. Europe and North America

199. The great disparities between countries in the region was noted, as was the range of experiences in terms of obstacles encountered, lessons learned and best practices. Delegations noted the important role played by the Economic Commission for Europe in the coordination and harmonization of policies for the region. Particular attention was drawn to the Convention on Long-Range Transboundary Air Pollution and its protocols as important instruments for reducing air pollution and promoting regional cooperation.

200. Though the countries in the region are very diverse, they all share a concern for energy security, which depends on the stability of supply, demand and pricing. In particular, the sustainable growth of industry depends on reliable, affordable and sustainable energy supplies. Delegations expressed concern over the security of the transfer of oil and gas, noting that energy security and environmental security are closely linked. It was pointed out that energy security could be improved by

increasing the share of renewable energy sources in the region. While access to energy is not a major problem in the region, energy poverty does exist.

201. In the fight against air pollution, delegations called for an integrated approach that builds on current progress and strengths and integrates energy efficiency, air pollution control and greenhouse gas emission reductions. The importance of regional cooperation, education, capacity-building and increased participation of women and youth in energy planning and addressing environmental issues was stressed. Some delegations expressed concern over the difficulty of establishing market-based mechanisms for controlling air pollution and greenhouse gas emissions, and emphasized the need for broader participation in Joint Implementation, the Clean Development Mechanism and similar programmes.

202. With regard to industrial development, delegations emphasized the importance of improving the capacity of small- and medium-sized enterprises to enhance energy efficiency and reduce pollution. The role of cleaner production centres in assisting small- and medium-sized enterprises was emphasized, as was the need for increased support for small- and medium-sized enterprises in technology transfer, eco-labelling, education and industrial capacity-building. An energy tax, with revenues used to support small- and medium-sized enterprises capacity-building, was identified as one successful method for financing the sustainable growth of small- and medium-sized enterprises. Delegates also emphasized the importance of corporate responsibility in industry. There were also calls for plans for sustainable production and consumption and for a global convention on heavy metals. It was noted that industrial development will continue to underpin sustainable development, creating both employment and social cohesion.

203. It was noted that there were different opinions on the role of nuclear energy in providing energy for sustainable development.

D. Asia and the Pacific

204. Participants noted that some of the countries in the region of the Economic and Social Commission for Asia and the Pacific are experiencing the fastest economic growth in the world, but there is still much poverty in several countries. Some 12 of the 15 cities in the world with the highest air pollution are in Asia. It was recognized that this dynamic, diverse and rapidly growing region must alter its development path towards sustainable development underpinned by sustainable energy if the world is to achieve sustainability. It was noted that in China, for example, rapid economic growth has been combined with progress towards sustainable development in recent years, supported by laws and regulations to improve environmental protection, natural resource management and energy efficiency. It was also noted that the 2005 Seoul Initiative on Environmentally Sustainable Economic Development offers guidance for achieving sustainable economies and societies.

205. Some delegations stressed the importance of "green growth" for the region, combining economic growth and poverty reduction with environmental sustainability. However, there is concern that some countries may face an economic slowdown if the costs of energy resources, including oil, continue to rise. Some delegates said that rising oil prices are likely to increase demand for biomass energy, which could increase the burden on women.

206. There was general recognition that priority should be given to access to cleaner and affordable energy for all. It was also noted that low-cost energy technologies exist and need to be made available including through partnerships.

207. It was noted that the Pacific small island developing States face special challenges that need unique solutions. Regional cooperation through such programmes as the Pacific Plan is important for addressing such challenges as climate change, disaster reduction and energy security. National sustainable development strategies have been developed, serving as a valuable platform for dialogue with development partners. Many small island developing States are exploring renewable energy.

208. The critical role of science and technology in enabling the region to balance environmental protection and social development with economic growth was stressed, particularly for ensuring energy security. Energy conservation, energy efficiency, transfer of advanced fossil fuel technologies, new sources of energy, carbon capture and storage and carbon sequestration are all important options. Some delegations emphasized the importance of energy diversification, but noted that this would require huge investments and international assistance. Special funds for innovation have been established in some countries with sustainable development as the highest priority.

209. Some delegations stressed that climate change requires responses from and cooperation among all stakeholders, not just Governments. It was also noted that the agricultural sector will be the most affected by climate change and that this could constitute a threat to food security.

E. Latin America and the Caribbean

210. Cleaner energy technologies and renewable energy were emphasized for addressing the serious problem of urban air pollution and problems of climate change. It was noted that, despite some success stories, there had been no overall improvement in energy efficiency in the region of the Economic Commission for Latin America and the Caribbean, in contrast to the steady improvements in other regions. The need to diversify the energy mix of countries through incentives for cleaner technologies, such as the internalization of the health costs of pollution, was highlighted.

211. Regional and national initiatives to assess and promote energy efficiency, renewable energy, sustainable transport and urban air quality were being implemented or developed in a growing number of countries, including Argentina, Brazil, Chile, Colombia and Mexico. The importance of involving all stakeholders was stressed. Targets for renewable energy were considered important measures to be established with appropriate support. There were also calls for interconnecting national electricity grids to improve efficiency and promote greater use of renewable sources of energy.

212. The region offered a number of good examples of sustainable urban transport systems, including systems in Brazil, Santiago, Bogota and Mexico City, with innovative systems of bus rapid transit. For example, Brazil is using ethanol produced from sugar cane as motor fuel, thus reducing oil imports, air pollution and greenhouse gas emissions. Most cars produced in the country now have "flex-fuel"

engines capable of using any mixture of gasoline and ethanol. Other countries in the region, such as Colombia, are progressively taking advantage of biofuels.

213. Industrial development in the region is facing obstacles that need to be addressed through regulatory reform. The importance of small- and medium-sized enterprises was noted, as a source of employment but also as presenting difficulties for introducing cleaner technologies. This, in turn, could be addressed through international cooperation. There are a number of cleaner production centres in the region which can assist small- and medium-sized enterprises. Other initiatives to promote clean energy and address climate change included a national carbon fund for small- and medium-sized enterprises and energy efficiency labelling for appliances.

214. The tourism industry is very important in many countries of the region, most notably in the Caribbean small island-developing States. Climate change impacts are of particular concern for this sector as well as for agriculture, housing and communications infrastructure. It was noted that there is already significant use of renewable energy in the Caribbean, notably solar water heaters, and fiscal incentives are being used to promote renewable sources of energy in the tourism industry. Adaptation to climate change and preparedness for natural disasters were considered important issues that need to be addressed, due to how vulnerable Central American and Caribbean countries are to the impact of climate change.

215. Energy poverty, inequality and vulnerability as well as the particular impact on women of inadequate access to energy were emphasized. There is a need for better data, disaggregated by gender, to analyse this problem and help identify solutions. There is a need to consolidate the principles of sustainability in national policies and development programmes. In some countries of the region, innovative financial mechanisms, such as payment for environmental services, have been developed in order to recognize the multiple services provided by ecosystems, such as the absorption of carbon dioxide and protection of river basins.

V. Small Island Developing States day

216. In accordance with decision 13/1 taken by the Commission last year, one day at each of its review sessions will be devoted to monitoring progress on the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. At the Commission's fourteenth session, that discussion was held on 9 May 2006.

217. Introductory statements were made by the Under-Secretary-General of the Department of Economic and Social Affairs, Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, the Assistant Secretary-General of the Department of Economic and Social Affairs and the Chairman of the Alliance of Small Island States. The importance of a regular review of the Programme of Action for the Sustainable Development of Small Island Developing States was underscored, as was the need to focus on its implementation. The High Representative suggested a strengthened role for the inter-agency consultative group on small island developing States, including consideration of the use of indicators for monitoring small island

developing States' progress. The importance of regional intergovernmental and other organizations and South-South cooperation were also identified as crucial for enhancing support for small island developing States.

218. Speaking to the thematic cluster for the Commission at its fourteenth and fifteenth sessions, the Assistant Secretary-General of the Department of Economic and Social Affairs underscored the fact that heavy dependence on imported fossil fuels for transportation and power generation remained a significant challenge to small island developing States' development. Strategies to improve energy efficiency and to develop innovative renewable energy sources would therefore contribute to reducing the vulnerability of small island developing States and promoting wider access to modern energy services. Expanded use of renewable energy was also seen as an effective response to the challenge of climate change, which is important in view of the increasing threat of sea level rise and climate-related natural disasters affecting small island developing States.

219. The Chair of the Alliance of Small Island States underscored the importance of pursuing implementation of the Mauritius Strategy on the basis of global partnership. He highlighted the priority that small island developing States attached to the mobilization of resources, technology transfer and capacity-building for their sustainable development. The streamlining of measures to facilitate access by small island developing States to resources in institutions such as GEF also remained a priority.

220. Review of implementation of the Programme of Action for the Sustainable Development of Small Island Developing States and the Mauritius Strategy was conducted through three panel-led discussions addressing the thematic cluster of issues. Panel one reviewed energy efficiency, energy access and the development and expanded use of renewable energy technologies in small island developing States. The panellists discussed a number of issues: the challenges and impacts of different policy choices, such as privatization, on efficiency and cost-effectiveness in the energy industry; the advantages and challenges of increasing synergy between agriculture and energy policy, using the Mauritius Strategy experience in energy generation from cow-wood as an example; and the successes and challenges in the development of renewable energy technologies in small island developing States. It was noted that the privatization of energy utilities in the Caribbean had not brought the expected reduction in the price of energy services. In the prevailing environment of rapidly increasing oil prices, energy diversification was critical. Significant initiatives in wind, biomass, solar energy and cogeneration have been tested and proven viable in small island developing States. Electricity generation from cow-wood in Mauritius now represents 20 per cent of energy use in the country, maintaining the value of sugar cane production in the light of the recent 36 per cent loss of trade preferences in sugar exports.

221. Speakers highlighted the potential for the development of biofuels, while underscoring the need for concessionary financing for feasibility studies, supportive local policies, an enabling environment for project development and strong political will for their implementation. Some delegations suggested that small island developing States should consider preparing options for a non-fossil fuel future. The United Nations system was called on to support efforts to develop alternate energy sources and to promote energy efficient industries in small island developing States. Cooperation between small island developing States was also cited as an effective

means of developing renewable energy and energy efficiency options in small island developing States.

222. Although many representatives of the donor community, including some developing countries, mentioned numerous projects, programmes and initiatives undertaken in partnership with small island developing States in the area of sustainable energy, the need for further assistance for small island developing States to achieve progress towards the Millennium Development Goals was stressed. A major group representative called for the strengthening of negotiating skills and project writing capacity in small island developing States.

223. Many delegations noted the importance of access to information on technologies that could be adapted to the varying needs of small island developing States; one size did not fit all. Partnerships with the private sector and regional and international entities were considered useful for this purpose. The need for support from the international community in making financing available for energy investment was also highlighted.

224. Panel two reviewed innovative strategies to enhance industrial development in small island developing States. Panellists addressed energy efficiency in the tourism industry, synergies between the agriculture and tourism industries and innovative technologies for building local industry using indigenous resources in small island developing States. The success of coconut oil as a diesel fuel substitute on some Pacific islands was highlighted. The use of coconut fuel and solar energy on remote islands lacking electricity supply has facilitated the development of micro-industries and small business opportunities, with great benefit to local communities and economies. The advantages to rural development of expanded linkages between tourism and agriculture were also showcased.

225. It was recalled that small island developing States have small economies, small markets and labour supply, restricted land for industrial development and a limited range of facilities for specialized education and training. These factors have presented major challenges to achieving efficiency and competitiveness in the development of indigenous industries. Small island developing States also continue to grapple with other compelling priorities for development with limited resources at their disposal. The importance of developing local renewable energy sources to small island developing States dependent on fossil-fuel imports was underscored by many delegations, as industrial development requires a cost-effective and reliable energy supply. Delegations also emphasized the importance of the linkages between energy and resource efficiency in enhancing competitiveness.

226. Capacity-building for research, data collection and analysis and other strategies that would support accurate assessments of industrial development needs is critically lacking. The use of centres of excellence for these purposes was encouraged, and it was noted that South-South cooperation could contribute substantially in this area.

227. Panel three addressed efforts to mitigate air pollution and promote adaptation to climate change in small island developing States. The panellists highlighted the vulnerability of small island developing States to climate change and climate variability and noted that small island developing States had already begun to incorporate adaptation and resilience-building measures into their sustainable development strategies, addressing such areas as agriculture, insurance and disaster

management. Adaptation initiatives being implemented included a regional approach to building codes and risk-reduction strategies in the insurance industry. It was also considered important for small island developing States to work towards mainstreaming adaptation strategies in sustainable development planning. One delegation urged ongoing cooperation in oceanography, climate impact monitoring, modelling, information sharing and distance learning in support of small island developing States.

228. Delegations drew attention to the importance of financing feasibility and vulnerability studies for the development of sustainable energy plans. One delegation noted that it was not always in the best interests of small island developing States to await private sector leadership in investment and that given the size of small island developing States, action to address sustainable energy often required government leadership. The need for a global approach to solidarity and shared responsibility in addressing sustainable energy and climate change was also underscored.

229. Delegations commented that this review had afforded an opportunity to appreciate the achievements, challenges and potential of small island developing States in the thematic cluster. They were encouraged by the efforts of small island developing States and their commitment to innovative action. The importance of reaffirming the commitment of resources from the international community was underscored by the representatives of many small island developing States. One delegation stressed the need for greater coherence in donor assistance and for greater attention and sensitivity to local conditions in the development of sustainable development projects. Some delegations supported the creation of a mechanism to help pair the needs of small island developing States with donor resources, to help small island developing States in accessing available financing. Some delegations also expressed continued support for strengthening the small island developing States Unit in the secretariat to support implementation of the Programme of Action for the Sustainable Development of Small Island Developing States.

VI. Interactive discussion with major groups

230. At its fourteenth session, the Commission continued its tradition of including a multi-stakeholder dialogue segment as part of its official proceedings. The multi-stakeholder dialogue segment held on 3 May 2006 involved representatives of women, youth, indigenous people, non-governmental organizations, local authorities, workers and trade unions, business and industry, scientific and technological communities and farmers. Lead organizations from each sector were invited by the secretariat to consult with their constituencies to prepare "dialogue papers" and to organize the participation of their delegations. This dialogue provided an opportunity for a focused discussion on the role of major groups in promoting implementation activities in relation to the thematic cluster, including in the areas of education, raising public awareness, disseminating information and knowledge and fostering partnership initiatives.

231. The segment was organized into three blocks of 30 minutes each, comprised of short presentations from three major groups followed by interactive discussion among Governments and major groups. Local authorities, indigenous people and

farmers addressed climate change, air pollution and atmosphere; business and industry; women and scientific and technological communities spoke about energy for sustainable development; and non-governmental organizations, trade unions and youth focused on industrial development.

232. During the discussion, major groups and Governments highlighted the following:

A. Obstacles and constraints

233. Transformation of the global energy system can be linked directly to industrial development. Taking into account the impact of complex and difficult political situations with regard to energy, environment and increasing population, the unsustainable nature of the present energy regime and the privatization of basic energy services are seen as obstacles to sustainable industrial development. The proliferation of nuclear energy technologies is considered by a number of major groups to be unsustainable.

234. Regarding climate change, the modalities and procedures for activities under the Clean Development Mechanism generally fail to address issues of social and environmental justice, including rights to land and self-determination. A lack of market access and poor regional coordination present obstacles to ensuring climate-friendly farming practices.

B. Lessons learned and best practices

235. Important lessons have been learned by some Governments with regard to developing supportive national policies that promote the integration of gender concerns into energy projects, introducing income-generating energy technologies that make energy services affordable for women and increase their social status, and recognizing that such technologies are most successful when they address the needs of the people meant to use them. The case of a small hydropower project is one example of sustainable energy that did not displace people, provided employment, used local resources, partnered with the private sector, reinvested profits in the community and has strong potential for replication in other rural areas.

236. An increase in networking among sectors has also proven to accelerate progress in implementation. Collaborating through a worldwide network of 675 local governments, many cities have established emissions reduction targets and implemented climate protection policies. A climate impact assessment carried out by the Arctic Council in partnership with indigenous communities provides a specific example of regional participatory cooperation that can be replicated in other parts of the world. Overall, there is growing acceptance of a multidimensional approach to the interlinked aspects of climate change, atmosphere and air pollution, involving stakeholder participation in developing educational models and tools for training and capacity-building to disseminate knowledge.

C. Means of implementation

237. There remains an urgent need for capacity-building in science and engineering, enhanced funding for research and development and support for climate-related observational networks. While efforts are being made by some Governments to mainstream sustainable development education at all levels, to empower youth to

pioneer new employment opportunities, jobs and services and support long-term sustainability of industries, more progress is needed in this area. There is wide support for increased reporting on activities towards education for sustainable development.

D. Continuing challenges

238. To meet rising energy demands and accelerated economic growth, Governments need to evolve, innovate and invest significantly to create a solid foundation of good governance without corruption, support frameworks that encourage competitiveness, employ a wide range of energy options and integrated energy policies, provide innovative finance solutions and include all stakeholders in partnerships for sustainable energy development. Governments could increase support for the development of clean and renewable technologies and work towards enhancing collaboration with major groups to ensure the participation of indigenous people, farmers and women in the implementation of energy projects, climate impact assessments and actions to implement mitigation and adaptation strategies related to climate change. Industrial policy should strive to include social aspects of worker education and training programmes, with a focus, inter alia, on sustainable consumption and production, generate decent and meaningful jobs, create new market opportunities and ensure reliable access by the poor to energy services. Women in particular must be given greater access to education on affordable energy services and cleaner fuels.

239. All stakeholders, including farmers, local communities and local authorities, need to be included in all stages of the decision-making and implementation processes related to eco-efficiency projects, the development of biomass technologies, the implementation of regulatory systems and climate change research.

VII. Partnerships fair, learning centre and side events

A. Partnership fair

240. The fourteenth session of the Commission featured a partnerships fair in its official activities. The fair was organized by the secretariat to provide an opportunity for registered partnerships to showcase progress in their activities, network with other partnerships, identify new partners and learn from each other's experiences. The programme of activities for this year's fair included "Partnerships in practice" interactive discussions sessions, partnership presentations and partnerships information desks (see annex III).

241. From 1 to 9 May 2006, there were 28 partnership presentations, 7 interactive discussion sessions and 25 information desks. Three of the interactive discussions focused on partnerships working in areas related to the thematic cluster of the Commission's fourteenth session. Specific issues covered included energy efficiency and cleaner industrial development, implementing climate change goals and commitments through partnerships, and improving access to energy for the poor. The other four discussions explored cross-cutting issues related to partnerships, including strategies for the effective communication of partnerships information, benefits related to partnering with the private sector, building capacity

through partnerships in small island developing States and challenges related to partnership networking.

242. The presentations and discussions offered an array of partnership experiences from initiatives that are promoting good governance and working to effect change at the national, regional and international policy level to examples of partnerships working at the local level, delivering affordable alternatives to unsustainable energy sources, reducing greenhouse gases emissions, improving air quality and developing emission standards. The role of partnerships in engendering broad stakeholder engagement was recognized, noting the work of various initiatives that serve as a facilitating mechanism to bring together relevant stakeholders working towards sustainable development. The importance of strengthening the participation of the private sector in partnerships was underlined.

243. Partnership representatives stressed that the success of their initiatives was dependant on the existence of a supportive policy and regulatory framework; political commitment at high levels; public awareness; and a sustainable resource base. The challenges identified ranged from difficulties faced in scaling up pilot projects to the national and regional level to concerns over the time and resource-intensive nature of coordination between partners.

244. The need for effective communication of partnership outcomes was stressed, with a focus on reporting demonstrable results. At the same time, it was acknowledged that the metrics of assessing partnership success remain a challenge, particularly in the cases of those initiatives that are focused on activities with qualitative outcomes such as capacity-building, training and public education.

245. A diverse range of participants — from Governments, major groups, the United Nations system and other organizations — and a focus on practical results-oriented dialogue created a positive learning atmosphere. All sessions featured dynamic and fruitful exchanges.

246. The partnerships fair presentation and discussion sessions were well attended, averaging 35 people per session (ranging from 20 to 60). Overall feedback from partnership representatives who utilized the information desks was also positive.

B. Learning centre

247. The learning centre offered 17 courses during regular meetings of the Commission at its fourteenth session (see annex IV for the list of courses). They offered participants the opportunity to obtain the best knowledge and know-how available on the given issues from top-level academics and field participants in relation to the themes of the fourteenth session of the Commission, as well as cross-cutting issues related to gender, financing and development strategies. Course instructors provided trends analysis and highlighted lessons learned, challenges faced and prospects for the future related to specific issues presented. They employed case studies, role-playing and interactive discussions. Instructors represented a wide range of universities, research institutions, industries, non-governmental organizations and international institutions.

248. A total of 569 participants attended the learning centre at the Commission's fourteenth session. Class size averaged 35 participants with some courses attracting close to 50 people representing government delegates, non-governmental organizations, international institutions and individual experts attending the

Commission session, including many returning participants. Summaries of the learning centre courses were made available on the Commission website on a daily basis, together with electronic copies of the presentations.

C. Side events

249. Eighty-nine side events and related activities organized by major groups, Governments, United Nations agencies and other international organizations took place in the margins of the official meetings of the Commission's fourteenth session. The side events and related activities were focused on issues related to the main thematic cluster of the current implementation cycle and provided an opportunity for informal exchange of views, information and experience.

Part two

I. High-level segment

250. The High-level segment of the Commission's fourteenth session was held from 10 to 12 May 2006. The Chairman of the Commission, Aleksi Aleksishvili, Minister of Finance of Georgia, chaired the segment.

251. In his opening statement, Secretary-General Kofi Annan called on the Commission to act with greater imagination in exploring ways to bring the poor into the modern energy and industrial economy, while moving energy use and economic activity onto a cleaner path and safeguarding the planet and its climate for future generations. He called for a revolution in energy efficiency and for new efforts to scale up investment in renewable energy. He urged countries to fulfil their commitments to climate agreements and to integrate climate change mitigation and adaptation measures into national development strategies.

252. The High-level segment included a ministerial dialogue with business leaders, with a focus on the role of the private sector in implementing sustainable development in relation to the thematic cluster of issues of the Commission's fourteenth and fifteenth sessions. The dialogue was led by a panel of ministers, industry leaders and high-level representatives of international financial institutions. Dialogue sessions also took place with heads of United Nations agencies, funds and programmes, including international financial institutions and major groups. The Director-General of the World Trade Organization made a statement about energy trade and greater energy security for countries without adequate domestic resources.

253. Many ministers stressed the urgency of concrete actions to increase access to energy by the poor in developing countries, particularly in Africa. The Forum of Energy Ministers of Africa was cited as an excellent example of an initiative with clear objectives, including doubling the use of modern energy by 2015 and including energy in all national development strategies. The urgency of achieving the Agenda 21 and Johannesburg Plan of Implementation goals, as well as the Millennium Development Goals and other internationally agreed development goals, was emphasized, as was the cost of inaction.

254. Poverty eradication in developing countries was highlighted as a priority for many ministers, with particular attention to the cross-cutting issues of sustainable development for Africa, the least developed countries, small island developing

States and landlocked developing countries. It was generally felt that actions should be based on national priorities and needs and that there is not one solution for all countries.

255. Several ministers underscored the need for balanced treatment of the issues in this thematic cluster, given their importance for sustainable development. Many called for an integrated approach to energy, industrial development, air pollution/atmosphere and climate change, with particular attention to the interlinkages between these issues and means of implementation, as an action-oriented basis for deliberations at the Commission's fifteenth session. The need to consider these issues within the context of the three pillars of sustainable development was also noted.

256. A number of participants underlined the need for a long-term, predictable policy framework to help countries move to a low carbon emission society.

257. Improving access to modern energy services, particularly by poor women and children, was stressed as critical to meeting sustainable development goals. Some highlighted the need to improve capacities and raise awareness about energy options, especially among women. Others noted a need to involve women at all levels of energy decision-making, management and implementation. Ensuring energy access in rural areas was viewed as requiring different types of action than doing so in urban areas. The adverse impact of higher energy prices on the poor in developing countries, in particular in the least developed countries and small island developing States, was emphasized.

258. A number of delegations highlighted national and international initiatives they were taking to improve access to energy, particularly for the poor, to promote cleaner technologies and to address issues of climate change mitigation and adaptation, air pollution and atmospheric problems and industrial development.

259. There was an emphasis by many on adaptation to and mitigation of climate change for achieving sustainable development goals and the MDGs. It was stressed by several delegations that significant climate change impacts were already being experienced in many parts of the world and that building resilience and supporting adaptation measures was an especially urgent need for vulnerable countries, in particular the least developed countries and small island developing States. Many delegates stressed the importance of the Convention on Climate Change and the Kyoto Protocol for international action on climate change, calling for further action for the period after 2012 on the basis of the agreement taken in Montreal in 2005. Several ministers cited the potential of reforestation and avoiding deforestation for mitigating climate change.

260. The harmful impact of air pollution on human health was stressed by several ministers, who noted that, while the problem affects all countries, a particular concern is the serious health threats to poor women and children in developing countries caused by indoor air pollution resulting from traditional cooking methods. The transport sector was cited as particularly important for reducing air pollution. Regional cooperation was seen as an important avenue for reducing transboundary air pollution.

261. The value of reliable scientific knowledge and data for policy, planning and decision-making was stressed by many delegations, as was the need to maintain and improve global data collection and analysis capabilities related to the atmosphere.

climate system and the impact of human activities on it. Support for the work of the International Panel on Climate Change, Global Climate Observing System, the World Climate Research Programme and the planned Global Earth Observation System of Systems was deemed essential.

262. Many delegates stressed the importance of energy efficiency and renewable energy in reducing air pollution and greenhouse gas emissions. Energy efficiency was considered essential to enhancing industrial development as well. Many countries have made energy efficiency central to their sustainable development strategies and some have taken action on efficiency standards, labelling and regulations. Targets, economic incentives and regulations have also been used in some countries to encourage renewable energy sources, including geothermal, solar, wind and biofuels and some felt that such measures could be further strengthened. Some delegations mentioned that greater attention should also be given to energy conservation.

263. Recent increases in energy prices were seen by some participants as an important stimulus for the adoption of energy efficiency measures and for greater use of renewable and advanced energy technologies, including advanced, cleaner fossil fuel technologies.

264. The need for energy diversification was emphasized by several ministers. However, since energy from fossil fuels will provide the dominant share of energy supply in most countries for the foreseeable future, the need for cleaner fossil fuel technologies was also stressed. A number of technologies, including carbon capture and storage and carbon sequestration were cited as possible options. A few delegates emphasized hybrid options, using fossil-fuel energy in combination with other energy options. Some pointed to the benefits of natural gas as a cleaner fossil fuel for lowering air pollution and greenhouse gas emissions.

265. Many ministers emphasized, however, that the cost of advanced technologies remains high and greater investment in renewable energy and advanced fossil fuel technologies must be encouraged and new product and process technologies developed and introduced. Developed countries were encouraged to take the lead in further developing such technologies and making them accessible to developing countries at affordable prices.

266. Subsidizing fossil fuels was viewed by some as an impediment to the further development and utilization of renewable energy technologies, while others expressed concern about the social consequences of eliminating subsidies.

267. Some delegates felt that the Commission could complement the efforts of the Convention on Climate Change by focusing on the interlinkages among the four themes and promoting energy efficiency, renewable energy technologies, advanced and cleaner energy technologies, including advanced, cleaner fossil fuel technologies, investments aimed at co-benefits in these areas and pursuing the Millennium Development Goals.

268. Industrial development in Africa was seen as a priority by many ministers, who noted that NEPAD arrangements could facilitate South-South trade relationships and exchanges of information. Small businesses needed greater access to capital, entrepreneurial training and improved capacities for meeting international product standards and marketing their products. Large enterprises through their

supply chains could also help to strengthen the technical capacity and cleaner production methods of small- and medium-sized enterprises.

269. It was noted that environmental performance is emerging as a possible competitive factor. Though small- and medium-sized enterprises are engines of growth in developing countries, they face particular challenges in accessing finance for investing in more competitive and cleaner production methods. There is a need for the development of industry networks, benchmarking of performance and dissemination of results, as well as outreach programmes from large to small firms to support the adoption of cleaner production technologies.

270. Deficiencies in developing countries' infrastructure were noted as a constraint on the sustainable development of energy and industry. The major barrier constraining infrastructure investment in developing countries was said to be the cost — and not necessarily the availability — of capital. Measures to address this cost barrier are needed.

271. Some participants, noting the long life span of industrial plant and equipment, emphasized the importance of making appropriate technology choices in a supportive policy environment.

272. Several speakers noted that breaking the pattern of unsustainable energy use and climate change, and decoupling economic growth from greenhouse gas emissions, requires urgent action to promote more sustainable consumption and production patterns. The Marrakesh Process was seen as taking important steps in this direction. Links between energy production and consumption, transport, urban and land-use planning and air pollution pointed to a need for an integrated approach.

273. Many countries stressed the need for additional resources and more flexible and predictable aid flows to developing countries, in particular the least developed countries and small island developing States. Many noted the benefits of the Clean Development Mechanism and called for a substantial fourth replenishment of GEF. Many countries expressed concern about the Resource Allocation Framework recently adopted by the GEF Council, stressing the need for equity within and simplification of the allocation system, which should be based on country needs.

274. The importance of innovative financing mechanisms and technology transfer arrangements for increased investments in energy efficiency and renewable energy technologies was stressed by many. The international financial institutions could provide funding for feasibility studies and offer credit guarantees for cleaner technology investments in developing countries that would otherwise not be able to attract commercial financing. From the private sector, investments in modern energy for the poor and in clean energy from both fossil fuel and non-fossil fuel sources are needed. The role of well-functioning financial markets and institutions in making capital available to business was mentioned.

275. The World Bank investment framework for clean energy, which is currently being developed, is to include new financing facilities that will strengthen private-public engagement in clean energy.

276. Many countries considered that the Adaptation Fund under the Kyoto Protocol should be dedicated to the implementation of concrete adaptation projects in the most vulnerable countries.

277. There was general agreement that public-private partnerships have a vital role to play in providing clean energy services. Such partnerships can be effective in leveraging private investment with public funds, undertaking research and development for cleaner, more efficient energy, improving air quality and health and generally facilitating energy for sustainable development and industrial development. Governments, for their part, are responsible for establishing leadership, setting clear and realistic targets, providing a sound legal framework, reducing transaction costs for doing business, offering risk-sharing mechanisms and providing seed money to leverage private capital.

278. The important role of the private sector in helping to mobilize resources and provide scientific and technical know-how and management skills was mentioned by many ministers. Innovative and efficient methods of implementation at the micro level was highlighted, along with the need for corporate social and environmental responsibility, including participation in such voluntary initiatives as the OECD Guidelines for Business Ethics, the Global Compact and the draft International Organization for Standardization guidelines and respect for International Labour Organization core labour standards.

279. All major groups participated in the high-level segment and expressed their willingness to work together in partnership with Governments to implement sustainable development practices and policies. Many delegations pointed to the vital role that major groups play in developing policy proposals and ensuring successful implementation of the goals and targets related to the thematic cluster. Ministers encouraged and supported major groups' engagement at all levels and noted that major groups help to ensure that Governments carry out their responsibilities in attending to the social, economic and environmental aspects of sustainable development. Several Governments also highlighted the importance of incorporating the various roles of major groups, especially women and youth as peer educators in policy decisions by the Commission at the fifteenth session.

280. A number of delegates urged greater use of national sustainable development strategies as a framework for coordination of national development activities. Such efforts could be combined with national plans to achieve the Millennium Development Goals and other development targets. The regional perspective was also highlighted and the importance of the regional implementation meetings and the work of the regional commissions was cited.

281. Several Government representatives expressed the view that the effectiveness of United Nations agencies operating in developing countries could be greatly improved by aligning their activities with the Millennium Development Goals and the Johannesburg Plan of Implementation goals and targets and by strengthening inter-agency cooperation in implementation. United Nations agencies could also assist in strengthening South-South cooperation, for example, with regard to bio-fuel alternatives.

282. Good governance at all levels was seen by many as critical to fruitful partnership activities leading to sustainable development. Key actions include facilitating the devolution of power and the empowerment of stakeholders and creating and optimizing partnerships both within and across borders. Sound national governance arrangements are needed in order to attract private sector investment.

283. Development cooperation and public-private partnerships are important conduits for making cleaner, more efficient technologies available to developing countries, as illustrated by the many examples offered by ministers and industry leaders.

II. Responding to challenges: the way forward

284. Ministers identified a number of challenges to be addressed in the course of the Policy Year with a view to strengthening implementation of Agenda 21, the Johannesburg Plan of Implementation and the Mauritius Strategy, in the areas of energy for sustainable development, industrial development, air pollution/atmosphere and climate change, and to facilitate achievement of the Millennium Development Goals, including:

(a) Mobilizing financial resources from all sources, including international, regional, national and local, public and private, as well as official development assistance, while improving investment frameworks, utilizing market mechanisms and exploring innovative financing in order to expedite implementation;

(b) Integrating energy for sustainable development, industrial development, air pollution/atmosphere and climate change in national sustainable development strategies, poverty reduction strategies and national development plans and ensuring a long-term integrated approach to implementation;

(c) Enhancing international and regional cooperation, including both North-South and South-South cooperation, engaging Governments, international organizations and stakeholders, with particular attention to the interlinkages among the themes and the cross-cutting issues, and addressing economic, social and environmental issues in an integrated and balanced way;

(d) Enhancing the role of partnerships, with the participation of major groups, in mobilizing new and additional resources, and encouraging those that effectively contribute to meeting national needs;

(e) Enhancing means of implementation by building capacities in developing countries, increasing the transfer of appropriate technologies and strengthening education and training, with financial and technical assistance from developed countries and international organizations;

(f) Addressing the special needs of Africa, the least developed countries, small island developing States and landlocked developing countries;

(g) Enhancing the roles and status of women, as participants and agents of change, integrating a gender perspective in planning, decision-making, management and implementation and engaging young people in implementation;

(h) Providing energy for all — access to reliable and affordable energy services for sustainable development, giving particular attention to the rural and urban poor, especially women, who currently have no access to modern energy services for cooking, heating and electricity, in order to meet basic human needs and facilitate the achievement of the Millennium Development Goals;

(i) Promoting energy efficiency, including end-use efficiency, public awareness campaigns and better technology options, and increasing the share of renewable energy;

(j) Strengthening the development, use and transfer of cleaner energy technologies, including renewable energy and advanced energy technologies, including cleaner fossil fuel technologies, supported by stable, predictable regulatory frameworks;

(k) Promoting, with a sense of urgency, international cooperation on climate change, including both mitigation and adaptation, strengthening international support to vulnerable countries on adaptation measures, in particular for the least developed countries and small island developing States, and reinforcing the functioning of the Clean Development Mechanism;

(l) Reducing air pollution, with particular attention to indoor air pollution from traditional biomass fuels and its health impacts on women and children, as well as outdoor air pollution, taking into account its relation to transportation, industry, urban development and energy production and consumption;

(m) Promoting an enabling environment at the international and national levels for industrial development in developing countries, including through integration into global markets and supply chains, trade liberalization, improving market access, strengthening their capacity to diversify exports, boosting productivity and meeting international product standards, with particular attention to small- and medium-sized enterprises;

(n) Promoting good governance at the national and international levels and creating an enabling environment for investment, including a transparent, legal and regulatory framework;

(o) Changing unsustainable patterns of consumption and production, with developed countries taking the lead, including through corporate social and environmental responsibility and the Marrakesh Process and its task forces;

(p) Considering effective follow-up of the thematic issues discussed at the Commission's fourteenth session.

Chapter III

Provisional agenda for the fifteenth session of the Commission

1. The Commission considered item 5 of its agenda at its 21st meeting, on 12 May 2006. It had before it the draft provisional agenda for its fifteenth session (E/CN.17/2006/L.1).

2. At the same meeting, the Commission approved the provisional agenda, and recommended it for adoption by the Economic and Social Council (see chapter I above).

Chapter IV

Adoption of the report of the Commission on its fourteenth session

1. At its 21st meeting, on 12 May 2006, the Commission had before it its draft report (E/CN.17/2006/L.2).

2. At the same meeting, the Commission adopted the draft report and entrusted the Rapporteur with its completion with a view to its submission to the Economic and Social Council.

Chapter V
Organizational and other matters

A. Opening and duration of the session

1. The Commission on Sustainable Development held its fourteenth session on 22 April 2005 and from 1 to 12 May 2006. The Commission held 21 meetings, as well as a number of informal meetings and associated activities and events.

2. At the 2nd meeting, on 1 May 2006, the Under-Secretary-General for Economic and Social Affairs opened the meeting and addressed the Commission.

B. Election of officers

3. At its 1st meeting, on 22 April 2005, the Commission elected the following members of the Bureau by acclamation:

Chairman:

Aleksi **Aleksishvili** (Georgia)

Vice-Chairmen:

Javad **Amin-Mansour** (Islamic Republic of Iran)
Adrian **Fernandez Bremauntz** (Mexico)
Yvo **de Boer** (Netherlands)

4. At its 2nd meeting, on 1 May 2006, the Commission elected Azanaw Tadesse **Abreha** (Ethiopia) as Vice-Chairman by acclamation.

5. At the same meeting, the Commission agreed that Yvo **de Boer** (Netherlands) would also assume the responsibilities of Rapporteur.

C. Agenda and organization of work

6. At its 2nd meeting, on 1 May 2006, following statements by the representatives of Guyana (on behalf of the States Members of the United Nations that are members of the Rio Group and the Caribbean Community) and Cuba, the Commission adopted its provisional agenda (E/CN.17/2006/1) and approved its organization of work. The agenda was as follows:

1. Election of officers.
2. Adoption of the agenda and other organizational matters.
3. Thematic cluster for the implementation cycle 2006-2007 — review session:
   (a) Energy for sustainable development;
   (b) Industrial development;
   (c) Air pollution/atmosphere;
   (d) Climate change.
4. Other matters.

5. Provisional agenda for the fifteenth session of the Commission.

6. Adoption of the report of the Commission on its fourteenth session.

D. Attendance

7. The session was attended by representatives of 53 States members of the Commission. Observers for other States Members of the United Nations and for the European Community, representatives of organizations of the United Nations system and secretariats of treaty bodies, as well as observers for intergovernmental, non-governmental and other organizations, also attended. The list of participants will be issued in document E/CN.17/2006/INF/1.

E. Documentation

8. The documents before the Commission at its fourteenth session are listed in annex I.

Annex I

List of documents

Document symbol	Item	Title or description
E/CN.17/2006/1	2	Provisional agenda
E/CN.17/2006/2	3	Report of the Secretary-General entitled "Overview of progress towards sustainable development, a review of the implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the Johannesburg Plan of Implementation"
E/CN.17/2006/3	3	Report of the Secretary-General entitled "Energy for sustainable development, industrial development, air pollution/atmosphere and climate change: Integrated review of progress in meeting the goals, targets and commitments of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the Plan of Implementation of the World Summit on Sustainable Development"
E/CN.17/2006/4, Add.1-Add.4, Add.4/Corr.1 and Add.5	3	Note by the Secretariat on outcomes of the regional implementation meetings
E/CN.17/2006/5, Add.1-Add.9	3	Note by the Secretariat on major groups discussion papers on energy for sustainable development, industrial development, air pollution/atmosphere and climate change
E/CN.17/2006/6	3	Report of the Secretary-General on partnerships for sustainable development
E/CN.17/2006/7	3	Report of the Secretary-General entitled "Integrated review of the thematic cluster of energy for sustainable development, industrial development, air pollution/atmosphere and climate change in small island developing States"
E/CN.17/2006/8	3	Note by the Secretariat on the outcome of the International Symposium on Integrated Implementation of Sustainable Development Goals
E/CN.17/2006/9	3	Letter dated 31 January 2006 from the Permanent Representative of China to the United Nations addressed to the Secretary-General, transmitting the Beijing Declaration on Renewable Energy for Sustainable Development
E/CN.17/2006/10	3	Letter dated 31 January 2006 from the Permanent Representative of China to the United Nations addressed to the Secretary-General transmitting the Beijing Declaration on Hydropower and Sustainable Development
E/CN.17/2006/11	3	Letter dated 22 February 2006 from the Permanent Representative of Qatar to the United Nations addressed to the Secretary-General transmitting the International Symposium on Natural Gas and Sustainable Development summary report on conclusions and recommendations
E/CN.17/2006/12	3	Report prepared by the Mountain Partnership secretariat entitled "The Mountain Partnership: activities and achievements"
E/CN.17/2006/13	3	Letter dated 16 January 2006 from the Permanent Representative of Austria to the United Nations addressed to the Secretary-General

Document number	Item	Title or description
E/CN.17/2006/14	3	Letter dated 10 April 2006 from the Permanent Representative of Azerbaijan to the United Nations addressed to the Secretary-General, transmitting the Baku Declaration on Energy Efficiency and Sustainable Development in the Caspian Sea Region and Other Oil Producing and Exporting Countries
Other documents		Background papers:
		Background document entitled "Trends in sustainable development: energy for sustainable development, industrial development, atmosphere and air pollution, climate change"

Annex II

List of conferences and meetings organized during the intersessional period

- International Conference on Renewable Energy
  (Bonn, Germany, 1 to 4 June 2004)
- United Nations Symposium on Hydropower and Sustainable Development
  (Beijing, 27 to 29 October 2004)
- Energy for Development conference
  (Noordwijk, the Netherlands, 12 to 14 November 2004)
- United Nations International Symposium on Integrated Implementation of Sustainable Development Goals
  (Nanchang, China, 10 to 12 May 2005)
- Second International Meeting on Sustainable Consumption and Production
  (San José, 5 to 8 September 2005)
- Parliamentarian Forum on Energy Legislation and Sustainable Development
  (Cape Town, South Africa, 5 to 7 October 2005)
- Beijing International Renewable Energy Conference 2005
  (Beijing, 7 and 8 November 2005)
- United Nations Climate Change Conference
  (Montreal, 28 November to 9 December 2005)
- International Symposium on Natural Gas and Sustainable Development
  (Doha, 7 and 8 February 2006)
- Ninth Special Session of the Governing Council/Global Ministerial Environment Forum
  (Dubai, United Arab Emirates, 7 to 9 February 2006)
- World Bank Energy Week
  (Washington, D.C., 6 to 10 March 2006)
- African Ministerial Conference on Hydropower and Sustainable Development
  (South Africa, 8 to 10 March 2006)
- Symposium on Energy Efficiency and Sustainable Development
  (Baku, 28 to 30 March 2006)
- Climate Change and Sustainable Development: an international workshop to strengthen research and understanding
  (New Delhi, India, 7 and 8 April 2006)

Annex III

Partnerships fair

The following partnerships participated in the Partnerships Fair of the Commission for Sustainable Development at its fourteenth session which took place from 1 to 5 May 2006:

Partnership presentations

Advisory Action Plan 2020

Asia-Pacific Environmental Innovation Strategy Project

Cities for Climate Protection Campaign

Coalition for Rainforest Nations

Collaborative Labeling and Appliance Standards Program

Designing Country Profiles on Sustainable Energy Development

Energy and Environment Partnership with Central America

Global Network on Energy for Sustainable Development

Global Village Energy partnership

Indicators for Sustainable Energy Development

Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development

International Law for Sustainable Development Partnership

LP Gas Rural Energy Challenge

Methane to Markets Partnership

Network of Regional Governments for Sustainable Development

Partnership for Clean Indoor Air

Promoting an Energy-efficient Public Sector

Public Interest Intellectual Property Advisors

Renewable Energy and Energy Efficiency Partnership

Renewable Energy Policy Network for the 21st Century

Scientific Capacity Building Partnership for Sustainable Development in Developing Countries

Strategic Partnership among Rural Stakeholders for Cooperation in Sustainable Development

Sustainable Cities Initiative

Electricity Governance Initiative

Clean Energy Initiative

United States Energy Association/United States Agency for International Development Energy Partnership Program

Vinyl 2010

White Water to Blue Water

Partnership information desks

Adriatic Action Plan 2020

Asia-Pacific Environmental Innovation Strategy Project

Cities for Climate Protection Campaign

Collaborative Labeling and Appliance Standards Program

Dams and Development Project

Energy and Environment Partnership with Central America

Global Village Energy partnership

International Law for Sustainable Development Partnership

International Partnership for Sustainable Development in Mountain Regions

LP Gas Rural Energy Challenge

Methane to Markets Partnership

Network of Regional Governments for Sustainable Development

Partnership for Clean Fuels and Vehicles

Partnership for Clean Indoor Air

Promoting an Energy-efficient Public Sector

Public Interest Intellectual Property Advisors

Recovery of the Circuit of Four Lakes

Renewable Energy Policy Network for the 21st Century

Scientific Capacity Building Enhancement for Sustainable Development in Developing Countries

Strategic Partnership Among Benin, Bhutan and Costa Rica for Cooperation on Sustainable Development

Sustainable Cities Initiative

Sustainable Rural Development and Ecovillage Training Program

Electricity Governance Initiative

United States Energy Association/United States Agency for International Development Energy Partnership Program

Vinyl 2010

Annex IV

Learning centre: list of courses

Title, subject area, instructor(s) and instructor affiliation for each course are listed in the order that they were scheduled.

How to reduce CDM costs. Bruce Chadwick, Columbia University, Eron Bloomgarden, Ecosecurities.

Strategic Environmental Assessment (SEA) — A Tool for Mainstreaming Sustainable Development into Development Planning. Maria Rosário Partidário, Technical University of Lisbon, Brendan Barrett, United Nations University Online Learning.

Urban Slum Electrification: Improving Electricity and Energy Services for the Urban Poor. Carlos Rufin, Babson College, Connie Smyser, Smyser Associates, Antonio Pinhel, Coelba.

Energy Efficiency for Sustainable Development. Richard Ottinger, Pace University, Steven Nadel, American Council for an Energy Efficient Economy.

Sustainable Development Law on Climate Change. Robert O'Sullivan, Climate Focus B.V., Sébastien Jodoin, Center for International Sustainable Development Law.

Energy Indicators for Sustainable Development. Alan McDonald, International Atomic Energy Agency.

How to Reduce Air Pollution with Cleaner Fuels and Vehicles. Michael Walsh, MacArthur Fellow.

Climate Change Mitigation. John P. Holdren, Harvard University.

Integrating Energy Considerations into MDG-based Development Planning. Vijay Modi, Columbia University, Eric De Muynck, United Nations Development Programme-Senegal, Minoru Takada, United Nations Development Programme.

The Gender Face of Energy: Gender Tools for Energy Projects. Govind Kelkar, International Fund for Agricultural Development-United Nations Development Fund for Women, Sheila Oparaocha, ENERGIA, May Christine Sengendo, East African Energy Technology Development Network, Uganda.

How to Ensure Sustainable Development using Hydrogen. Thorsteinn Sigfusson, University of Iceland, Jon Bjornsson, Iceland New Energy Ltd, Graham Pugh, International Partnership for the Hydrogen Economy, Luo JingGuang, Qunghua University, China.

How to Apply for GEF Projects — Focus on Energy. Frank Pinto, United Nations Development Programme Global Environment Facility, Yannick Glemarec, Global Environment Facility.

Energy and Sustainable Development — Issues for Public Action: Bringing the Messages Home through Journalists and Opinion Leaders. James Sullivan, Energy Markets Group, Newton Sibanda, Zambia Daily Mail, Charles Mangwiro, Radio Mozambique.

The RETScreen Training Seminar: Assessing Clean Energy Project Opportunities (Séminaire de formation RETScreen: évaluation des opportunités des projets d'énergies propres) — a bilingual course: Gregory J. Leng, RETScreen International Clean Energy Decision Support Centre; Kevin Bourque, Natural Resources Canada

Financing Energy SMEs: Phillip LaRocco, Harish Hande, Paul van Aalst, Ellen Morris, E+Co

Innovative Energy Financing in Developing Countries: Steven Howlett, GE; Christine Ebs Singer, E+Co.; Jonathan Hoffman, InfroCo Ltd.; Larisa Dobriansky, United States Department of Energy; Edward Roche, Jas Singh, United States Agency for International Development

Building an Innovation Economy: Incorporating Entrepreneurship into Industrial Development: Richard Bendis, Innovation Philadelphia

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